

MILITARY MEDICINE

ORIGINAL ARTICLES

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Practical Application of Pulmonary Physiology for Small Hospitals*

By

MAJOR ROBERT B. STONEHILL, USAF (MC)†

(With eight illustrations)

IN DEALING with pulmonary patients, the clinician traditionally aims his efforts at ascertaining the pathological and etiological status of the patient's disease and at methods of correcting the disease process. Another facet, the functional status of the patient, is now available for study utilizing inexpensive equipment and simple techniques.

First let us scan the field of pulmonary physiology. There are three main arbitrary subdivisions: (1) Ventilation—or bellows action of the lung, (2) Gas distribution within the lung, (3) Alveolar capillary respiration—or transport of gases across the alveolar capillary membrane.

It is through the study of the first division (ventilation), that the small hospital can best profit. Over 90% of pulmonary patients can be adequately evaluated utilizing ventilatory studies alone. There are two reasons for this. First, a relatively smaller variation in ventilation than in the last two divisions causes symptoms. Second, by the time that there is a significant alveolar-capillary block, ventilation is usually severely impaired.

There are two types of ventilatory insuffi-

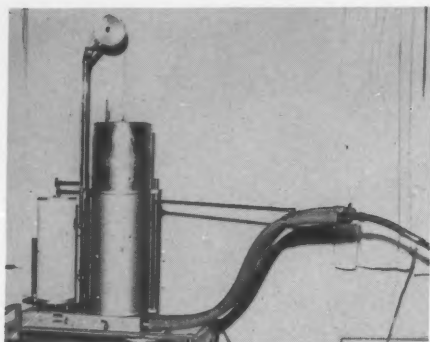
ciencies, obstructive and restrictive. The obstructive type is secondary to an impediment of air flow in the air passages, as in emphysema or asthma. This increases resistance to air flow and increases the work of breathing. The restrictive type is due to functional alveolar destruction or restriction of lung movement as in pleural effusion, pulmonary edema, or pneumonia.

The basic pieces of equipment necessary for ventilatory function studies are a fluoroscope, a Collins respirometer, a Douglas bag with mask and directional valves, and a gasometer (low resistance gas meter). With the fluoroscope, one looks for rib cage and diaphragmatic movement to see if it is smooth and synchronous. Restriction of movement of either hemidiaphragm or half of the rib cage is noted. One also notes whether there is mediastinal shift or areas of localized air trapping. Of course, pleural adhesions and effusions are sought. With experience, a fairly accurate determination of the percent of ventilation contributed by each lung can be estimated.

In utilizing the Collins respirometer (Fig. 1) the patient breaths into the mouth piece, causing the upper metal drum to move up and down with each respiratory excursion. Through the chain and pulley, a pattern is drawn on the drum of the kymograph which moves at a constant known rate of speed.

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† Chief of Pulmonary Disease Service, Lackland Air Force Hospital, San Antonio, Texas.

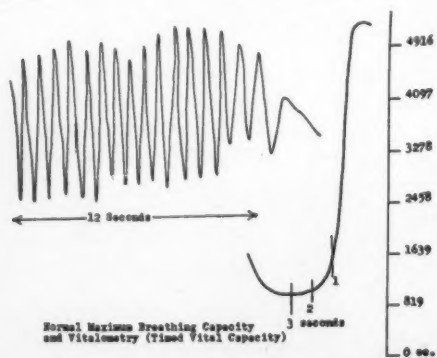


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FIG. 1. Collins Respirometer.

The vital capacity can be recorded on the kymographic drum. This is the maximum expiration after a complete inspiration. Because the drum moves at a known rate of speed, one can easily visualize the time taken to accomplish the vital capacity. This, then, is the timed vital capacity and is expressed as the percent of the total vital capacity expelled in 1, 2, or 3 seconds (Fig. 2). Normally, over 75% of the total vital capacity is expelled in 1 second, and over 95% in 3 seconds.

Using the respirometer, we can also test the maximum breathing capacity (MBC). Before performing either this test or the vital capacity test, we must assure ourselves of minimal resistance in the machine by removing the CO₂ cannister and the directional air valves. The patient now voluntarily hyperventilates at a maximum effort into the



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FIG. 2. Respirometer Tracing of Normal Patient.

respirometer for 12 seconds. From the kymographic tracing the amount of air respired is calculated and multiplied by 5 to determine the theoretical amount of air which the patient could move in one minute. This value is the maximum breathing capacity. The MBC and total vital capacity of the patient are compared with the predicted normal values for the patient, which are calculated by use of the formulae of Baldwin, Courmand and Richards.¹ Normally, the observed results fall within 20% of the predicted values.²

These formulae are:

Vital Capacity (supine) in CCs.

Males $[27.63 - (0.112 \times \text{age in yrs.})] \times \text{height in cm.}$

Females $[21.78 - (0.101 \times \text{age in yrs.})] \times \text{height in cm.}$

Maximum Breathing Capacity (standing) in L./min.

Males $[86.5 - (0.522 \times \text{age in yrs.})] \times \text{M}^2\text{BS}$

Females $[71.3 - (0.474 \times \text{age in yrs.})] \times \text{M}^2\text{BS}$

M²BS is the square meters of body surface. This can be ascertained from the Dubois Body Surface Chart (as prepared by Boothby and Sandiford of the Mayo Clinic). This chart is printed on the back of the graph paper supplied by Warren and Colle Co., for use with their respirometer.

Let us look at several examples of respirometer tracings to see what we could expect. In obstructive insufficiency the MBC and timed vital capacity are significantly reduced, while the total vital capacity remains comparatively normal (Fig. 3). That is to be expected because of increased resistance to air flow, while there is no reduction in lung volume. However, in restrictive insufficiency the volume of lung parenchyma is compromised, while there is no increased flow resistance. Here the total vital capacity is reduced in volume, but the timed vital capacity and MBC remain relatively unchanged (Fig. 4). If there is combined restrictive and obstructive insufficiency, all values will be abnormally reduced.

To perform a *walking minute ventilation*, the patient puts on a mask—Douglas bag apparatus (Fig. 5). The valve is so positioned that he expires into the room and not the bag. He then walks at the rate of 180

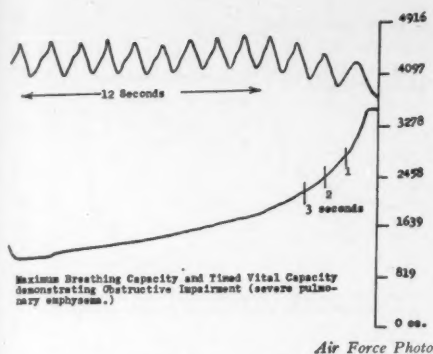


FIG. 3. Respirometer Tracing of Obstructive Insufficiency.

feet per minute for one minute to become acclimated and arrive at a relatively steady state. At the end of one minute the valve is turned so that expired air is collected in the previously emptied Douglas bag. The patient continues at the same pace for *exactly* 3 minutes, and the valve is turned, trapping the collected air in the bag. The apparatus is disconnected. The bag is emptied through the gasometer which records the volume of trapped air (Fig. 6). By dividing the volume by 3, we calculate the walking minute ventilation.

Clinical dyspnea is a subjective complaint, and is difficult to quantitate. Probably the best correlation between it and an objective measurement, is the percent of the MBC utilized in any specific activity.³ If a patient uses less than 25% of the MBC, he has no

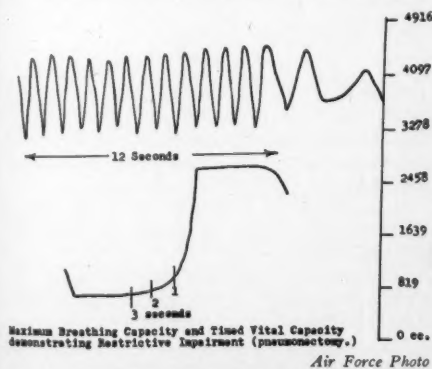


FIG. 4. Respirometer Tracing of Restrictive Insufficiency.



FIG. 5. Patient Wearing Mask—Douglas Bag Apparatus.

ventilatory cause of dyspnea. As he approaches 50%, marked dyspnea is noted. In my experience, dyspnea becomes apparent when the patient uses 35% or more of the MBC.

The walking test which we utilize, is a mild degree of exercise compatible with mere ambulation. When this exercise (180 feet

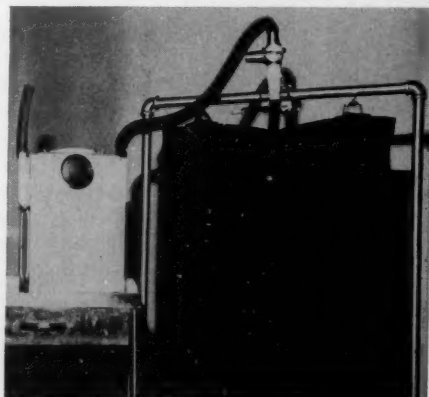
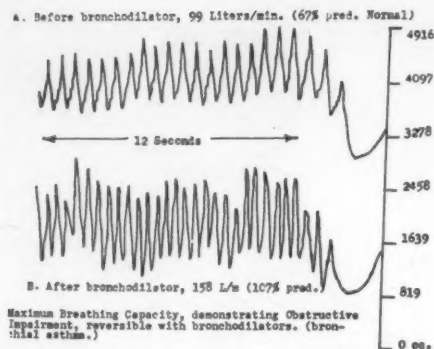


FIG. 6. Douglas Bag and Gasometer.



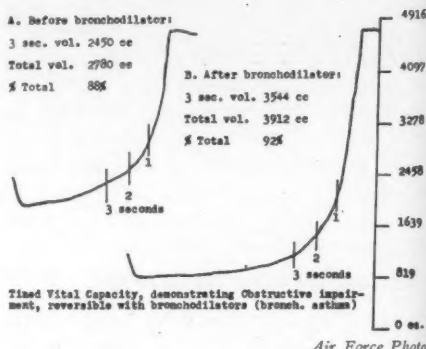
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FIG. 7. Respirometer Tracing of MBC Improvement After Isuprel Inhalation.

per minute) is used, the ratio of the Walking Minute Ventilation/MBC is known as the Warring Index or Dyspnea Index.⁴ If this exceeds 50%, the patient cannot ambulate and is a respiratory cripple.

It is common practice in our hospital for clinicians to obtain initial ventilatory evaluation of the patient and then subsequently to have him retested to determine his functional response to therapy. When a patient demonstrates significant obstructive insufficiency, he is retested after broncho dilator inhalation to determine if there is a component of reversible bronchospasm. If bronchospasm plays a significant role, it should largely be relieved by a drug such as Isuprel® and the maximum breathing capacity will improve (Fig. 7). The same is true of the timed vital capacity because of the reduced air flow resistance (Fig. 8).

In addition, the surgical staff utilizes our laboratory, and patients scheduled for pulmonary surgery are tested pre-operatively. If the dyspnea index is elevated, surgical procedures which would significantly reduce the maximum breathing capacity are avoided if possible. The MBC is the most variable factor in the dyspnea index as the walking minute ventilation is relatively constant. We aim to prevent the elevating of the dyspnea index to 50, and thus in turn prevent curing a disease, but making the patient a respiratory cripple. The degree of reduction of the MBC by any specific procedure varies some-



Air Force Photo

FIG. 8. Respirometer Tracing of Timed VC Improvement After Isuprel Inhalation.

what, but with experience, this can be fairly accurately anticipated. Paradoxically, as a result of some surgical procedures, ventilation is actually improved.

SUMMARY

By utilizing relatively inexpensive equipment and simple techniques, a considerable body of information concerning the patient's functional status can be discerned. The MBC, vital capacity, and timed vital capacity tests, can ascertain the type and degree of ventilatory insufficiency. The dyspnea index or walking minute ventilation/MBC, can reveal the amount of ventilatory reserve. This type of investigation lends itself to use in small hospitals and even outpatient practice and should add to the understanding of the patient's problem as well as the efficacy of therapy.

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The Air Pollution Program of the Public Health Service*

By
VERNON G. MACKENZIE†

IN MANY modern communities, the concept that the natural air supply is not unlimited is being forcefully brought to our attention. Although winds and convection currents quickly dilute and disperse airborne wastes into the great reservoir of the atmosphere under most circumstances, rapid build-up of the concentration of air contaminants can occur when conditions of air stagnation occur over a city. The situation is not unlike that which long has been recognized with respect to water pollution—where the capacity of a river to assimilate waterborne wastes can be estimated closely as related to the minimum stream flow available for dilution. Minimum air supply for the dilution of airborne wastes from population centers similarly occurs when temperature inversions aloft restrict the volume of air over the city into which the airborne wastes can mix, and low wind velocities bring minimum quantities of fresh, clean air into this restricted volume. Unlike rivers, however, on which we have much information as to the occurrence of minimum flows, little is known statistically as to the minimum quantities of air flow available over our cities. The need for such information has been realized only recently, with the recognition that our air supply is a limited resource.

Public concern over air pollution is not new. However, increased urbanization and industrial growth—and particularly increased use of energy per capita—are causing air pollution problems of greatly magni-

fied extent and complexity. In the past, concern about air pollution has related mainly to smoke from coal and other solid fuels. Although ordinary coal smoke is still of major concern, other and more complex contaminants now overshadow it in importance in many areas. In this connection, it is important to note that, whereas in 1900 over 90 percent of fuel energy in the United States was supplied from solid fuels, approximately 70 percent of such energy now comes from liquid and gaseous fuels.¹

Objective data on the effects of air pollutants are comparatively scarce. With respect to health, the deficiency is of particular concern. Causative relationships have not been established for the dramatic, acute episodes of air pollution in the United States and abroad which have been accompanied by deaths in recent years, particularly in London. The potential long-range effects of pollutants on human health, although subject to widespread concern and conjecture, represent an even greater gap in professional knowledge. Little is known of the specific causes of even the more common and subjectively reported interferences with personal comfort, such as eye and respiratory irritations.

Extensive damage to property undoubtedly is caused by air pollution, the estimates running to billions of dollars per year. Objective data on which to base such estimates are scanty although definite—as, for example, with respect to the corrosion of metals where certain specific information indicating the adverse effects of industrial atmospheres is available.²

Knowledge of significant effects of air pollution on vegetation and livestock, although incomplete with respect to geographic distribution and causative relationships, is considerably more advanced than with regard to

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† Assistant Chief for Research and Development, Division of Sanitary Engineering Services, U. S. Public Health Service, Washington, D.C.

human health. Certain areas are well known in which significant agricultural damage has occurred due to air pollution and, in these cases, the causative relationship of such pollutants as fluorides, sulfur dioxide, and hydrocarbon "smog" is established.

The ramifications of air pollution problems involve the interests of many professional disciplines, as evidenced by the establishment of air pollution committees by many of the national technical and professional societies and many industrial associations. Although this dispersion of interest has perhaps made the organization of research on air pollution more difficult administratively, the widespread interest should provide, in the long term, a solid foundation for the effort needed to solve the problems now existing.

The Public Health Service and several other Federal agencies long have had an interest in air pollution and have conducted or supported limited studies on various aspects of it. Until last year, however, no concerted effort was made to organize any comprehensive approach to the whole problem. In 1954, an ad hoc Federal interdepartmental committee was established by the Secretary of Health, Education, and Welfare at the informal suggestion of the White House, and with membership from the Departments of Agriculture, Commerce, Defense, Interior, the Atomic Energy Commission, and the National Science Foundation. In April 1955, the Committee submitted a report³ recommending a comprehensive, unified Federal program of research and technical assistance on community air pollution problems. At the same time, Congress was considering legislation incorporating similar provisions. This legislation, Public Law 159 of the 84th Congress, approved by the President July 14, 1955, authorizes the Surgeon General of the Public Health Service to carry on a program of research and technical assistance related to air pollution, with an appropriation of not to exceed 5 million in each of the fiscal years 1956 through 1960. The law states as the policy of Congress that the legal control of air pollution is a responsibility of the State and local governments and that Federal as-

sistance should be provided through research and technical services. The Surgeon General is authorized by the Act to plan research programs in cooperation with other Federal agencies and with other public and private organizations.

The scope of the Act is very broad, giving recognition to the dangers to public health and welfare, injury to agricultural crops and livestock, hazards to air and ground transportation, and damage to property.

Specifically, the Act authorizes the Surgeon General:

- To conduct research in the Public Health Service and to support and aid the conduct of research by State and local air pollution authorities, and other agencies and institutions;

- To encourage cooperative activities by State and local government agencies and other organizations and to make joint studies with them;

- To collect and disseminate information;

- To conduct surveys and make investigations of specific air pollution problems at the request of State or local air pollution control authorities;

- To make grants and award negotiated contracts to State and local air pollution control agencies, other public and private agencies and institutions, and to individuals for research, training, and demonstration projects.

To foster voluntary coordination of effort on the Federal level, the Interdepartmental Committee on Community Air Pollution has been organized permanently under the chairmanship of the Surgeon General. The Committee provides formal liaison with respect to air pollution between the Public Health Service and the other agencies represented. It has the further function of reviewing the areas and scope of needed research and other technical activities and advising the Surgeon General thereon.

The Congress has appropriated funds to implement the new law—\$1,722,000 in fiscal year 1956, and \$2,740,000 for 1957. The air pollution program is operating in the twin

areas of research and technical assistance. About 75 percent of the available financial resources are used to support the research segment of the program and the remainder is used for technical assistance activities. Program activities are being carried on (a) directly by the Public Health Service, (b) through other Federal agencies by use of Public Health Service funds transferred to them, and (c) by non-Federal grantees and contractors of the Public Health Service.

The direct program within the Service is organized in two operating Divisions—the Division of Sanitary Engineering Services, with responsibility for the engineering and physical sciences aspects of the program, and the Division of Special Health Services, with responsibility for studies of the effects on human health. Each of these Divisions has and is using its own research laboratory facilities in Cincinnati, Ohio—the Robert A. Taft Sanitary Engineering Center and the Occupational Health Field Headquarters Laboratory.

Health effects studies being conducted directly by the Public Health Service include investigations of the toxicity of ozone and the oxides of nitrogen, alone and in combination with other pollutants, of organic peroxides and hydro-peroxides, and of the sulfur compounds of hydrocarbons. Other health studies are concerned with biometric analyses of variations in causes of mortality in various areas of the country; attempt will be made to correlate these statistics with variation in intensity of air pollution. The direct health effects studies carried on by the Public Health Service are being supplemented by several research contracts with non-Federal institutions. At Baylor University, the effects of hydrocarbon-type smog on animal enzyme systems is being studied. At the University of Nebraska, study is being made of the effects on animal tissue cultures of exposure to various pollutants. The University of Pittsburgh has been awarded a contract to make an epidemiological follow-up study of the sequelae of the acute air pollution episode which occurred at Donora, Pennsylvania, in 1948.

The engineering and physical sciences research program in air pollution at the Sanitary Engineering Center has been organized in several operating sections: Instrument and Methods Development, Chemical Research and Development, Engineering Research and Development, and Meteorology. Some 20 research projects are under way. Projects are included for the development and improvement of field sampling equipment, for continuous monitoring of pollutants, and for development and improvement of analytical methods using chemical, physical and biological means, as (for example) the use of plants as pollution indicators. Evaluations are being made of available control procedures and of the pollutional contributions from specific industrial or community activities such as those industry operations contributing fluoride pollution, oil refining, incineration of municipal wastes, and automobile operation. In the important field of meteorology, fundamental studies are being made of the relationship between atmospheric variables and community air pollution levels. From these, it is hoped ultimately to provide means of objective assessment of the capacity of the atmosphere to dilute and disperse contaminants in specific locations. Attention is also being devoted to the development of procedures for prediction of air pollution episodes and the feasibility of use of models for investigation of atmospheric transport and diffusion of pollutants. Special mention should be made, perhaps, of the National Air Sampling Network, designed to set up and maintain a network of sampling stations throughout the United States for collection, identification, and measurement of air pollution in major population centers and representative nonurban areas. Currently, samples of suspended particulate matter are being collected in approximately 80 locations through the cooperation of local, State, and other Federal agencies. Analyses are made at the Sanitary Engineering Center for total particulate matter, metals, sulfates, chlorides, nitrates, benzene solubles, and radioactivity. By January 1957, it is planned that there will be a sampling station in each

major metropolitan area in the United States and at least one station in each State. The nonurban sampling sites are intended to provide information from unpolluted locations.

As in the case of the medical segment of the program, direct research activities in the engineering and physical sciences aspects of air pollution are being supplemented by contracts for specific research projects. The majority of these are with other Federal agencies which have specific resources for their accomplishment. Thus, contracts are now active with the U. S. Weather Bureau, the National Bureau of Standards, the Bureau of Mines, the Department of Agriculture, and the Library of Congress.

The Weather Bureau has agreed to accept responsibility for meteorological research in the total program and for staffing the Public Health Service air pollution program with required meteorological professional competence.

The Bureau of Standards is making studies of methods of sampling, transport, and analysis of gaseous and particulate pollutants including procedures for infrared, mass, and emission spectrometry, x-ray diffraction, and rapid methods appropriate for field use.

The Bureau of Mines is working on three principal projects: (1) engineering and small-scale pilot investigations for evaluation of processes for removal of low concentrations of sulfur dioxide from stack gases, (2) study of parameters of incinerator design and operation, and (3) study of automotive engine exhaust composition under various conditions of engine operation and fuel composition.

Smaller contracts with the Department of Agriculture and the Library of Congress provide respectively for (1) the assignment of staff competence to the Public Health Service in the field of plant physiology, to carry on studies of the use of plants as pollution indicators, and (2) the preparation of abstracts of all current technical literature on air pollution and their publication and distribution on 3" x 5" cards.

Two research contracts have been awarded

by the engineering segment of the program to non-Federal organizations. The State College of Washington has undertaken the development of a versatile automatic air pollution monitoring instrument and the development for use therewith of reagents specific for fluorides and sulfur dioxide. The Franklin Institute at Philadelphia is studying the feasibility of using compression methods for collection of air samples and the applicability of the ultra long path infrared spectrometer developed by it for quantitative determination of pollutants in the ambient atmosphere.

The air pollution program is making extensive use of the research grants mechanism for support of research in non-Federal institutions. To date, over \$1 million has been allocated for research grants. Twenty-six projects have been activated and approval of five additional projects is now being processed; six of the active projects are in their second year of support. Active projects include epidemiological studies of the effects of generalized and specific pollution, studies of toxicological and physiological effects of air pollutants, studies of chemical reactions among pollutants and for development of analytical procedures, studies of air cleaning methods and equipment, and investigations of pollution problems arising from specific industry operations.

We believe the research grants mechanism to be an important tool in the over-all program. It is considered particularly effective in providing a means of utilizing the research resource existing in universities and other research institutions throughout the country. One of the greatest benefits deriving from the use of this resource comes from the initiative and imagination of the trained investigators in such institutions in planning and exploiting methods of study of the complex problems with which we are faced.

Since the initiation of the air pollution program, a little over a year ago, several hundred requests for technical assistance on specific air pollution problems have been received from State and local government agencies and other organizations.

Consulting service has been rendered in a

large number of instances. Joint field studies have been undertaken in a number of areas—a statewide appraisal of air pollution problems in Connecticut; a similar study in Washington; assistance on special air sampling and refinery effluent studies at Los Angeles; a survey of existing air pollution and the potential contribution from a proposed oil refinery at Honolulu; appraisal of the air pollution problem at Portland, Oregon; survey of air pollution at Louisville, Kentucky, among others.

Because of limitations of staff and other resources, it has been possible to assist in surveys of local problems in only a small percentage of the instances requested. To provide somewhat more adequate assistance for the appraisal of specific problems, grants-in-aid are being made available this fiscal year to State and local agencies for demonstration projects. This will provide financial assistance to official agencies for survey and appraisal of their local problems and determination of the action needed to cope with them.

The Public Health Service has included in its air pollution program several methods of assistance in the training of professional personnel in specialized air pollution subjects. Short-term training courses are being conducted on a regular schedule at the Sanitary Engineering Center in Cincinnati. Last year, five courses, attended by 287 trainees, were given in chemical, physical, meteorological, engineering, and administrative fundamentals of air pollution. Additional short-term courses covering agricultural and industrial aspects of air pollution problems

have been added to the schedule for the current fiscal year. To provide assistance in more comprehensive training in air pollution technology, announcement has been made recently of the availability of grant-in-aid assistance to educational institutions for the developmental support of graduate level university curricula and to individuals for such training. This assistance is designed to expand the availability of specialized air pollution graduate training now being conducted at five universities only (Harvard, California, Rutgers, Cincinnati, and Florida), and to increase the number of professionally trained personnel needed for research and control operations.

These are the principal activities now under way in the Public Health Service air pollution program. Research is receiving the principal emphasis; assistance is also being provided for training of personnel and for solution of specific air pollution technical problems.

The present program is authorized by Public Law 159 for a five-year period ending in 1960. The major technical problems of air pollution in this country will not, of course, be solved by that time, but we believe that significant progress can be made.

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An Extemporaneous Study of Intestinal Parasites in Philippine Scouts

By

HAROLD F. HAMIT,* LT. COL., MC, USA, AND PHILIP T. CORTESE, M.D.†

INTRODUCTION

WHILE serving as unit surgeons of a Philippine Scout infantry regiment at Camp O'Donnell, Tarlac Province, Luzon, P. I., in 1946-7, the authors were impressed by the ubiquity of intestinal parasitosis of the Filipino soldiers of the regiment. The apparent commensalism with which Filipinos and their parasites existed was an even more interesting, not an original, and probably a fallacious observation.

The opinions of Garrison¹ (1908) regarding the absence of clinical symptoms in Filipinos harboring hookworms were substantiated by other investigators^{2,3} of that era. *Ascaris* and *trichuris* worms which infest a large percentage of Filipinos appeared even less nocuous. Many other authors have expressed dissatisfaction with the concept of intestinal parasites ordinarily being harmless. Willets⁴ (1911) noted with concern the growing tendency of some of his contemporaries to regard intestinal parasitosis, including hookworm, as diseases of little significance among the Filipinos. Schwartz and Tubangui⁵ (1922) warned that the presumed medical insignificance of parasitic infestations in these people should not be accepted without conclusive proof. This controversy has persisted, and, as late as 1946, Levine⁶ stated that from the immediate and the long range points of view hookworm was largely innocuous in American soldiers.

Misgivings regarding the apparent benignity of intestinal parasitosis prompted the authors, admittedly no parasitologists, to

undertake an extemporaneous field study of this problem. Our hypothesis was that parasitic infestations of the alimentary tract adversely affected the health of at least some of the Filipino soldiers. We resolved to determine whether there were differences in the type of parasites or degree of infestation harbored by soldiers reporting on sick call and those infesting apparently normal and healthy soldiers.

The purpose of this paper is to report our findings. An additional purpose is to demonstrate how a simple investigation undertaken under primitive conditions can result in a collection of valuable and interesting data which might provide a sound basis for recommendations for corrective action to commanders and higher medical echelons. One can hardly help being slightly repelled, for instance, upon learning that at least 63 percent of his food handlers are infested with intestinal parasites.

MATERIALS AND METHODS

All of the subjects of this investigation were young Filipino soldiers who had enlisted in a Philippine Scout infantry division and had been living and training under U. S. Army standards of hygiene and sanitation for an approximate average of nine months. These men came from all parts of the Philippine archipelago, but most of them were Visayans.

We began our study in January, 1947, by examining stool specimens of 381 Filipino soldiers who reported on sick call for any reason except injury; this group was designated Group A. Stools of apparently healthy Filipino soldiers who were performing duties as foodhandlers in various units of the regiment and those of a number of men selected at random from the enlisted medical detachment were examined as controls;

* Formerly Regimental Surgeon, 43rd Infantry Regiment (PS). Now at 2713 Finch St., Silver Spring, Md.

† Formerly Battalion Surgeon, 43rd Infantry Regiment (PS). Now in private practice at 8 Mohawk Place, Amsterdam, N.Y.

this group was designated Group B and consisted of 146 men. The results of stool examinations of 447 healthy enlisted soldiers of a Philippine Scout engineer battalion performed by one of us (P. T. C.) in November, 1946, comprised a second control group (Group C); this unit was a part of the division and located in the division area but was not part of our regiment. A total of 974 subjects were thus included in the complete study.

Our examination of the stools was necessarily somewhat simple and elementary and consisted of making one or more direct smears of each stool by suspending representative bits of feces in a drop of isotonic saline on a glass slide. The suspension was then examined microscopically under the low power, and if this examination revealed nothing unusual, a cover slip was placed over the suspension and a careful examination of the entire preparation was then conducted using both low (approximately 100x) and high dry (approximately 400x) powers. Multiple examinations of a stool specimen were performed only when the examiner was dissatisfied with the quality of the first preparation or when unusual findings were noted. No stool or ova concentration techniques were available, and no stains except an occasional iodine preparation to help

differentiate *Endameba histolytica* from other possibilities. The stools were collected without prior administration of purgatives and were examined anywhere from a few minutes to several hours after they were passed, whenever the lack of other duties permitted this activity.

The Chi-square method of statistical analysis was then used to make comparisons between groups. Whenever the results of these computations seemed unusual, they were checked by other methods.⁷

RESULTS

The results of this study may be found in Tables I, 11, and III. The stools of 610 (62.63 percent) of the 974 subjects examined were positive for parasites. Helminthic ova constituted by far the majority of positive findings. There was no significant difference among the percentage of total infestation of any of the groups. The sick call group, A, had significantly higher levels of double infestations than either of the control groups. The two control groups, B and C, apparently illustrating mathematical reciprocity, had significantly higher incidence of single infestations than Group A. The difference in triple infestations was insignificant between Groups A and B but was significant between Groups A and C. The dif-

TABLE I
NUMBER OF SPECIES OF INTESTINAL PARASITES PER SUBJECT IN
THREE GROUPS OF PHILIPPINE SCOUTS

Number of Parasitic Species	Groups						Total	
	A Sick Call		B Food Handler		C Engineer			
	No.	%	No.	%	No.	%	No.	%
Single Infestations	119	31.23	69	47.26	169	37.21	357	36.65
Double Infestations	104	27.30	19	13.01	84	18.79	207	21.25
Triple Infestations	28	7.35	5	3.43	13	2.91	46	4.73
Total Infestations	251	65.88	93	63.70	266	59.51	610	62.63
Not Infested	130	34.12	53	36.30	181	40.49	364	37.37
Total Studied	381	100.00	146	100.00	447	100.00	974	100.00

TABLE II
INCIDENCE OF SPECIES OF PREDOMINANT INTESTINAL PARASITES IN
THREE GROUPS OF PHILIPPINE SCOUTS

Species of Parasite	Groups						Total	
	A Sick Call		B Food Handler		C Engineer			
	No.	%	No.	%	No.	%	No.	%
Hookworm	171	44.88	43	29.45	114	25.50	328	33.68
Ascaris lumbricoides	71	18.64	26	17.81	130	29.08	227	23.31
Trichuris trichiura	137	35.96	47	32.19	97	21.70	281	28.85
Endameba histolytica	10	.03	2	.01	4	.01	16	.02
Number of Subjects	381	—	146	—	447	—	974	—

ferences in hookworm infestations between Group A (44.83 percent) and both Groups B (29.45 percent) and C (25.50 percent) were highly significant. Group C showed a significantly higher incidence of ascaris and a significantly lower incidence of trichuris than Groups A and B. There was no significant difference in amebiasis between any of

the groups.

In addition to the tabulated data, several experiences were encountered which were considered too uncommon to tabulate but interesting enough to describe.

The stool of a soldier from Leyte who reported on sick call with a complaint of bloody diarrhea was found to contain ova of

TABLE III
STATISTICAL SIGNIFICANCE OF DIFFERENCES IN SPECIES OF INTESTINAL PARASITES AND NUMBER
OF SPECIES PER SUBJECT AMONG THREE GROUPS OF PHILIPPINE SCOUTS

Groups	Species of Parasite and Number of Species per Subject	Groups (Probability)	
		B Food Handlers	C Engineers
A Sick Call	Hookworm	.001	.001
	Ascaris lumbricoides	ns	.001
	Trichuris trichiura	ns	.001
	Endameba histolytica	ns	ns
	Single Infestations	.001	.001
	Double Infestations	.001	.02
	Triple Infestations	ns	.01
	Total Infestations	ns	ns
B Food Handlers	Hookworm		ns
	Ascaris lumbricoides		.01
	Trichuris trichiura		.02
	Endameba histolytica		ns
	Single Infestations		ns
	Double Infestations		ns
	Triple Infestations		ns
	Total Infestations		ns

ns—Not significant at the 0.05 probability level.

Schistosoma japonicum, hookworm, and *Trichuris trichiura*. Another soldier from Leyte who reported on sick call with the complaints of abdominal cramps and bloody diarrhea manifested certain abnormal neurological signs and was found to have *Schistosoma japonicum* ova in his stools. He was sent to the hospital with the diagnosis of intestinal and cerebral schistosomiasis. The latter diagnosis, having originated in the field, provided moderate amusement for some of our colleagues at the hospital. Several weeks later it was learned that the patient had died—after numerous neuropsychiatric consultations, encephalograms, ventriculograms, and other examinations—of cerebral schistosomiasis.

One soldier who reported on sick call with complaints of abdominal cramps and diarrhea was found to have an unusual parasite which we identified as *Echinostoma ilocanum*. This uncommon intestinal fluke was originally described by Garrison,⁸ who called it *Fascioletta ilocanum*. More recently it has been redesignated as *Euparyphium ilocanum*.⁹ It is endemic in man in Luzon, particularly in the Ilocos provinces, but it is found in other areas where the proper intermediate snail host and other essential factors are available. The patient stated that he was not a native of Ilocos but that he had lived there about eight years. His stool also contained hookworm and *Trichuris* ova.

Two soldiers presented stool specimens containing ova of the cestode, *Hymenolepis nana*. One of these also contained *Endameba histolytica* trophozoites and *Trichuris trichiura* ova. Finally, the wife of a Filipino soldier submitted a stool specimen containing *Opisthorchus felinus* and *Ascaris lumbricoides* ova.

DISCUSSION

Our investigation revealed an incidence of intestinal parasitosis in Philippine Scouts somewhat lower than those found in other groups of Filipinos by earlier investigators (Tables IV and V). Lest undue significance be attached to the incidence of infestation found in our subjects, we must preface fur-

ther remarks with the notation that the equipment and facilities of a battalion or a regimental dispensary are not ideal for an investigation of this kind, that our examination of the specimens was somewhat meager, and that we are aware that the percentages found are quite likely an underestimate of the true incidence of intestinal parasitosis in Philippine Scouts. We believe, however, that our methods and errors were consistent enough to permit reliable comparisons between our groups of subjects and valid conclusions regarding the differences found. We suggest that some type of examination however meager, may be preferable to none.

Although the Army of the United States no longer contains Philippine Scout units, the matter of intestinal parasitosis should not be considered an extinct issue. Experience has shown that the normally low incidence of intestinal parasites found in American troops tends to rise sharply in areas where these diseases are prevalent. Stoll and others¹⁰ studied hookworm disease in two groups of marines on Guam during World War II. In a group of 1,241 replacements who had been on the island from five to nine months and who had not been farther west nor in combat, the incidence of hookworm was 5.7 percent. In a group of 742 combat veterans who had served in Pacific campaigns, particularly in the Philippines, the incidence of hookworm was 34.1 percent. May¹¹ found intestinal parasites in 86 percent of a group of 400 returned American soldiers who had been prisoners-of-war for more than three years in the Philippines and Japan. The distribution of predominant parasites in this group was: *Trichuris* 40 percent, hookworm 35 percent, *Ascaris* 35 percent, *Endameba histolytica* 11 percent, and *Endolimax nana* 15 percent. Sixty percent of these men had two species, and one percent had four species of parasites.

A second factor which may have resulted in the lowering of the incidence of intestinal parasitosis in Philippine Scouts, compared to other groups of Filipinos, may have been the period of residence of these troops under U. S. Army standards of hygiene and sanita-

TABLE IV
INCIDENCE OF INTESTINAL PARASITES FOUND IN FILIPINOS BY VARIOUS INVESTIGATORS

Number Examined	Locality	Total Infested (Percent)	Hookworm (Percent)	Ascaris (Percent)	Trichuris (Percent)	Authority
4,106*	Bilibid Prison	84.0	52.0	26.0	59.0	Garrison—1908
385	Manila	89.0	13.45	53.22	87.60	Garrison & Llamas—1909
1,000*	Taytay, Rizal	95.9	11.6	82.9	77.0	Garrison, Leynes & Llamas—1909
1,087*	Bilibid Prison	70.0	16.7	37.5	40.0	Rissler & Gomez—1909
119	Baguio	92.5	29.0	73.0	70.0	Chamberlain, Bloombergh, & Kilbourne—1910
932*	Cavite	85.6	2.4	67.2	65.1	Stitt—1911
4,278	Cagayan Valley	85.46	54.37	62.04	7.99	Willets—1911
500*	Manila (necropsies)	90.0	16.6	41.2	34.4	Crowell & Hammack—1913
6,416	Bilibid Prison	77.0	24.0	45.9	53.7	Willets—1913
400	Batanes Islands	100.0	24.5	92.8	46.7	Willets—1913
900	Philippine G.H.	89.1	20.2	50.0	64.4	Willets—1914
1,603*	Visayan Is.	66.5	31.31	27.82	41.11	Garcia—1917
649	Los Banos	84.76	48.69	35.28	55.0	Schwartz & Tubangui—1922
3,862*	Manila (food handlers)	—	6.19	55.62	25.51	Calubaquib & Rolda—1947

* Study includes protozoa.

tion. A third factor contributing to this finding is postulated in that some of the soldiers of this regiment had already been treated, more or less sporadically, for intestinal parasites. It is believed that the number of treated individuals included in this study was small and that this influence was not important in the lower incidence found.

A factor which may have influenced the incidence of intestinal parasitosis in this group in the opposite direction was the location of the division at Camp O'Donnell.

O'Donnell achieved a certain degree of infamy during World War II as a prisoner-of-war camp for the survivors of the Bataan Death March. Besides this historical interest, this fact may be pertinent to our study in that the sanitary standards of the camp when it was under Japanese administration are reported to have left much to be desired. It is believed that there must have been gross contamination of the soil by feces and parasitic ova at this time and that part of the contamination may have persisted long

TABLE V
NUMBER OF SPECIES OF INTESTINAL PARASITES PER SUBJECT FOUND IN
FILIPINOS BY VARIOUS INVESTIGATORS

Number Examined	Positives (Percent)	Number of Species/Subject			Authority
		Single (Percent)	Double (Percent)	Triple (Percent)	
4,106*†	84.0	37.12	26.98	21.24	Garrison—1908
4,278†	84.46	47.64	33.75	3.93	Willets—1911
400	100.0	46.0	42.5	11.5	Willets—1913
900	89.1	26.9	34.3	20.3	Willets—1914
649	84.76	41.14	32.97	10.63	Schwartz & Tubangui—1922
3,862*†	—	—	36.95	8.02	Calubaquib & Rolda—1947

* Study includes protozoa.

† Study of multiple infestations carried beyond the third order.

enough to result in increased exposure hazards when the camp was occupied by our troops.

The significant differences in the incidence of ascariasis and trichuriasis between the two control groups may have resulted from the violation of the unities of time and place. It should be noted that the studies of Group C, the engineer battalion, were conducted at a different time of year (November) and in a slightly different area, although still within the camp, than those of the other two groups. When one recalls that November in Luzon is the end of the six months rainy season, the lower incidence of trichuriasis and the higher incidence of ascariasis observed in Group C appears in contrast to the findings of Spindler¹² and many others who reported that a damp climate favors a higher incidence of trichuriasis, whereas a higher incidence of ascariasis is favored by a drier environment.

No significance can be attributed to the low incidence of amebiasis found in this study because the method of examination was not appropriate to reveal this parasite. Willets¹³ found the incidence of entamebic infestations to be 38.8 percent in 900 Filipino patients of all types in the Philippine General Hospital. Studies of other investigators revealed amebiasis in from 0 to 76 percent of Filipinos.

CONCLUSIONS

The two most important revelations of this study are the findings of significantly higher incidence of hookworm and of multiple parasitic infestations in a group of soldiers reporting on sick call as compared to two healthy control groups. Although these findings suggest that the events of hookworm and multiple infestations are deleterious to general health and well-being of the afflicted, this study offers no basis for stating this with finality and certainty without resorting to *post hoc, ergo propter hoc* reasoning. In our opinion, the problem of the clinical effect of intestinal parasites in native populations in regions where these diseases are indigenous in large percentages of those populations is one which merits considerable more extensive study under circumstances in which all possible associated factors are carefully controlled.

SUMMARY

In a simple, extemporaneous field study of young adult Filipino soldiers, the stools of 610 (62.63 percent) of 974 subjects were positive for intestinal parasitosis. By far the largest percentage of the parasites found were helminths. No significant differences were found in the over-all incidence of infestation between a group of 381 soldiers who were ill of various causes and two con-

trol groups of well soldiers. The sick soldiers had significantly greater incidence of hookworm and of multiple infestations than the control groups. These findings suggest, but do not prove conclusively, that hookworm and multiple infestations by intestinal parasites, contrary to the opinions of some authorities, are deleterious to the well-being of their hosts. Further studies of this matter are believed to be indicated.

ACKNOWLEDGMENT

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A New Prosthetic Hip Joint*

Experiences in Its Use in the Dog, and Its Probable Application to Man

By

COLONEL HARRY A. GORMAN, USAF (VC)†

IN THE dog, the coxofemoral or hip joint is the most susceptible joint to injuries inflicted by the automobile. A dog's natural instinct to protect its head against injury perhaps accounts for the frequency of trauma to the posterior areas. Atraumatic diseases of the hip joint are often observed in certain breeds of dogs; some of these anomalies are passed on from generation to generation.

In the human, the hip joint is also the most vulnerable joint to diseases and injuries. Such conditions as osteoarthritis, non-union fractures of the femoral head and neck, aseptic necrosis, recurring dislocations, Legg-Calvé-Perthes syndrome, coxa vara, long standing congenital dislocations and many other conditions have been observed to insult the performance of the hip joint.

Orthopedic surgeons have long been searching for the ideal means of caring for hip joint problems that do not respond to orthodox orthopedic treatment. Smith-Petersen in 1924 pioneered cup arthroplasty of the coxofemoral joint in man by inserting an inert cup between the articulating surfaces of the acetabulum and the head of the femur. Judet and others initiated the use of a femoral head prosthesis in considering hip joint prostheses.

Both cup arthroplasty and femoral head prostheses are used extensively by surgeons operating on man in their efforts to rehabilitate hip joints incapacitated by disease or injuries. In some cases the results have been

good while in others the outcome has been complete failure.

Veterinary orthopedic surgeons have had little experience with cup arthroplasties of the coxofemoral joint in dogs. Brown, Gay, McCarthy and others have installed femoral head prostheses in attempting to salvage or re-establish the function of the dog's hip joint. The results in dogs parallel the results in man, from outstanding success to bitter disappointment.

Among the more common complications following partial joint substitution, either by cup or femoral head prostheses are: dislocation of the prosthesis, pain where the inert material articulates with the living bony tissue, subluxations, exostoses around the prosthesis causing impinging pain, fracture of the prosthetic stem, and deep thromboses in patients confined to their beds on long post-operative recuperations.

In order to avoid these undesirable sequelae, it was decided to approach the problem from an entirely new angle; a *complete*, self-contained prosthetic hip joint.

Since the hip joint is an enarthrosis formed by the femoral head and the acetabulum, the new prosthesis was patterned after a ball and socket joint with a retaining rim to prevent dislocation of the parts. The acetabular portion of the prosthesis is secured to the pelvis by three toggle bolts that are placed completely through the bony pelvis. The femoral attachment was a combination of transfixing stem, locked to an intramedullary canal of the femur, but recently, the femoral attachment has been modified to a straight intramedullary fixation. This has simplified the surgical installation and the results have been equal to the more complicated combination type of femoral anchorage.

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† School of Aviation Medicine, U. S. Air Force, Randolph Air Force Base, Texas.

Considerable thought was given to the materials from which the prostheses could be made. Materials that are inert when imbedded in living bone are plastics, titanium, the stellites and the stainless steels.

Plastics have the advantage of being light in weight, and of possessing a self-lubricating property; however, plastics wear and abrade. They are translucent to the radiograph and are susceptible to breakage. Although used early in the development of many prostheses, plastics have been abandoned by both the surgeon and the appliance manufacturers.

Titanium is light, quite inert, relatively inexpensive and warrants more investigation before it is passed by for bone appliances.

The stellites are alloys with a low coefficient of friction, yet workable by machining. They are extremely expensive and their use so far has been restricted to prostheses for humans.

Stainless steel, SMO 18-8, type 316 is inert in body tissue; it can be machined, it is relatively inexpensive and possesses all the strength and stress qualities. This was the material selected for the dog prosthesis.

After the design of the complete joint prosthesis was established by cadaver fittings, the joint was surgically installed in 24 experimental dogs. All of the dogs began to walk on the leg bearing the prosthetic joint in from one to seven days following the surgery. The average time from surgery to weight-bearing was three days. Several of the dogs walked on the first day following surgery. In all of these dogs both the acetabulum and the femoral head were replaced by this complete joint which is lubricated by synovia from the joint capsule that encloses the prosthesis. The ranges of movement allowed by the substitute joint are equal to or exceed the normal joint ranges.

To better compare the results of the complete joint versus the partial joint (femoral head), a number of dogs were fitted with prosthetic femoral head prostheses.

The advantages of the *complete* prosthetic joint over a partial joint (femoral head or cup) are worthy of mention.

All movement within the *complete* joint

prosthesis is between insensitive structures, and therefore pain is not possible within the joint. Post-operative pain is expected in the surgical area but it subsides as in any other orthopedic plating operation. Femoral head prostheses, by comparison, articulate within the sensitive bone of the acetabulum and are a constant source of pain. Cup prostheses articulate with the acetabulum as well as the cancellous bone of the femoral head and the pain following this type of arthroplasty is severe upon movement.

Dislocation of the femoral head prosthesis and the cup prosthesis is reported as one of the more common complications in present hip arthroplasty. Casts are necessary to support the surgery and the confinement of patients to bed rest for long periods of time are factors which contribute to post-operative complications such as pneumonia, decubital necrosis and thrombophlebitis. Dislocation of the *complete* joint is impossible because the ball is securely retained by its mechanical construction. Casts to support the complete prosthetic hip are unnecessary, for the joint is completely stable from the day it is surgically installed. Ambulation of the patient is encouraged immediately following recovery from anesthesia. This factor, besides adding to the comfort of the patient, aids recovery by encouraging early exercise that prevents muscular atrophy.

For a successful partial joint arthroplasty, numerous sizes of the prosthesis are necessary for fitting by the surgeon. If growth of bone occurs or changes in the acetabulum takes place after surgery, the prosthesis requires refitting. The complete joint, on the other hand, is made in only three sizes: Proper size is selected at the time of surgery by choosing the size that the bone will accommodate. Post-operative growth of the bone will have no effect upon the fit or function of the prosthetic joint because it is wholly mechanical and cannot be altered.

The complete joint has a combination of transfixing and intramedullary types of fixation for stabilization. The partial joints depend on one or the other only. Post-operative bone necrosis is spread over four sites in the

complete joint anchorage, compared to two sites in the partial joint anchorage, thus reducing the chance of loosening the fixation.

This complete joint prosthesis has now been surgically installed in 53 dogs. Ten clinical cases have received the complete joint and two of the clinical cases have received a complete joint bilaterally. One of the experimental dogs has had his prosthesis for over two years with no adverse symptoms either clinically or radiographically.

These results, although still regarded as preliminary, have stimulated interest among orthopedic surgeons.

The evolution of man from a quadruped to his present upright carriage has brought about many anatomical variations not found in the four-footed animals. Some of the muscles used by the quadruped for propulsion are necessary to stabilize the hip joint of the biped. The pelvis of man is tipped upward and the joint proper is supported by four powerful ligaments not found in animals. Since each hip joint of the human must carry one half of the body weight, and since balance in the erect position is essential, the problem of prosthetic support in man becomes most challenging.

Research toward the adoption of a complete, self-contained prosthetic hip joint for man was outlined exactly as was the research conducted in establishing the prosthesis for the dog. Since there are anatomical differences between the dog and man, detailed studies of the human were necessary to determine the proper surgical approach, the

areas of anchorage, and the sizes and measurements for the new prosthesis.

Several pilot models were made using type 316 stainless steel. They were identical to the models for the dog except enlarged in all respects to accommodate for the added weight and stresses calculated for the human hip. These models were then fitted in cadavers with minor alterations made where indicated. To lighten the weight, the ball portion was made hollow and the femoral anchorage tri-flanged to prevent rotation of the prosthetic stem within the medullary canal of the femur.

Stainless steel, with a high coefficient of friction, possesses an undesirable quality known as "galling" or "pick-up" when two large surfaces are moved on one another. Such a finding necessitated the changing of materials for the human prosthesis from steel to a low friction stellite.

The design of the prosthesis for man has now been standardized. Throughout this research close coordination has been maintained between the physician and the veterinarian. The teaming of the professions in this endeavor has been most congenial as well as enlightening to both. It has proved that each represents his specialty in medicine and by joining forces both can go farther than either can go alone.

Should the results in humans parallel the results in dogs, we will have accomplished a definite step toward the restoration of function of the human hip joint that might otherwise be lost.



Spontaneous Puerperal Inversion of the Uterus— A Case Report

By

CAPTAIN MICHAEL MONIAS, MC, U. S. Army* AND CHARLES P. SHELDON, M.D., F.A.C.S.

INVERSION of the uterus is an uncommon complication of the third stage of labor. Its incidence is reported to vary from a high of 1-760 to a low of 1-16,000. Despite antibiotics and the availability of whole blood transfusion the mortality is high due to inadequate immediate treatment. We wish to report a rather unusual case of a spontaneous uterine inversion. In going over the total number of deliveries at the Murphy Army Hospital up to the present time (4,000), this has been the first incident.

CASE HISTORY. A 22 year old primi gravida was admitted on September 25, 1956 in active labor. Her estimated date of confinement was the day of her admission. The antepartum course had been unremarkable. After 9 hours of first stage and 15 minutes of second stage labor, the membranes were ruptured and a full term female infant (3,145 gms) that breathed and cried spontaneously was delivered by low forceps and left mediolateral episiotomy. Thirty-seven minutes later an intact placenta was expressed spontaneously. With the appearance of the placenta at the introitus, 1 c.c. of methergine was given intravenously. Immediately following the expression of the placenta, inversion of the uterus occurred with the entire fundus projecting out of the introitus. An infusion was started and the uterus replaced manually. During the period of acute inversion the blood pressure fell to 60/0 and the pulse rate rose to 140 per minute. Following the replacement of the uterus, the blood pressure failed to recover and the radial pulse became unobtainable. The estimated blood loss was 500 cc. At that point, 1 ampule of levophed was added to the infusion. The blood pressure then became

elevated to 100/60 and was maintained at this level with 30 drops a minute. Patient was taken to the Operating Room and a laparotomy was performed under local anesthesia. A loop of small intestine was found to be incarcerated in the incompletely replaced uterine fundus. The intestines were freed by a gentle traction using bowel clamps. They appeared bluish but soon resumed their normal color. The inversion was then reduced by the Huntington method. The blood pressure came up to 140/80 and the pulse rate came down to 100 immediately upon the replacement of the uterus and was maintained at this level without levophed. Exploration of the adnexa revealed a unilateral, smooth-walled, parovarian cyst measuring 4 × 5 × 6 cms which was resected. Patient withstood the procedure well. She was transfused with 500 c.c. of whole blood during the operation.

COMMENT. No precipitating factors were found in this case. The question was raised as to whether the inversion might have been due to increased intra-abdominal pressure caused by the ovarian cyst. This, however, seems unlikely as the cyst was not large. There is no single cause of inversion of the uterus. Manual removal of an adherent placenta, increased intra-abdominal pressure and mismanagement of the third stage of labor are thought to be precipitating factors. Spontaneous inversion without precipitating factors is recorded as 38%-40%.

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ARMED FORCES STRENGTH

A recent order to reduce the strength of the Armed Forces will save about \$200 million. The Army is to be reduced by 50,000; the Navy by 15,000; the Marine Corps by 10,000; and the Air Force by 25,000.

The strength of the Armed Forces was recently given as 2,789,642.

Intra-Uterine Foreign Body of Twelve Years Duration

By

MAJOR EKREM S. TURAN, M.C., U. S. Army Reserve*

(With two illustrations)

THE subject of foreign objects in the uterine cavity is one of the most interesting in Gynecology. Probably one of the earliest and most baffling cases on this topic is expertly written by Graham in his chapter, "Rabbits and Quacks."¹ In the early 17th Century, a young woman from London delivered baby rabbits under the observation of eminent physicians of her time. When close examination revealed she had passed animal parts, Mary admitted that pieces of rabbits had been impacted in her genital tract.

Since that time there have been many reports of foreign objects in the genital tract, ranging in size and shape from catheters to pencils. It is believed that all of these objects were introduced into the tract by the patient or by someone else and a great majority were inserted to prevent or terminate pregnancy.

Migration of foreign bodies into the uterine cavity from the vagina is rare unless the object is placed in the cervical canal. Catheters and long thin objects are the most frequent ones to travel into the uterus.

A brief review of cases by Freedman² discloses that occasional severe complications may arise but final results are favorable.

Apparently, as reported in many cases, foreign objects in the nonpregnant uterus cause no severe distress. Normal pregnancies have been reported with objects still present in the uterus.³ We have found no malignant degeneration due to this condition. The case presented here is very similar to the case reported by Fay and Kemp.⁴

Case Report: A 41 year old Gravida 4, Para 4, was seen in the Gynecology Clinic in early June 1956 for irregular lower ab-

dominal pain. Patient stated that she had been having occasional mild lower abdominal pain during the past eight years, however during the last three years the pains became sharper and more severe. Pain had no radiation and was located in the middle of the lower abdomen. She was delivered of her last pregnancy on 17 March 1944. Three months after that delivery she consulted her physician for advice for contraceptives. The physician inserted a ring in her vagina to prevent pregnancy. Six months following insertion, the ring was rechecked by the physician, cleaned and replaced.

One year following the insertion the patient suddenly began to have very sharp abdominal pains without any other symptoms. She immediately consulted her physician and a pelvic examination was done. She was told that she probably passed the ring with contractions because it could not be found. Since that time patient had regular menstrual periods lasting three to four days with very mild symptoms.

Physical Examination.—Physical and laboratory examinations were all within normal limits. External genitalia was normal. Vagina was parous, relaxed, deep but clean. Cervix was also clean, mid-position and enlarged about two times the size of a normal cervix. It was very firm, fibrotic and closed. The uterus was normal in size, mid-position and freely movable. Both adnexal regions were normal. Digital examination of the rectum was negative.

A flat plate of the abdomen showed a ring in the lower abdomen. X-ray report suggested this ring may be in the vagina and covered with mucosa, however, a careful search in the vagina did not reveal any foreign body. Repeat x-rays of abdomen with cystogram and barium enema indicated that the ring was in the uterus (Fig. 1).

*From U. S. Army Hospital, Obstetrics and Gynecology Section, Fort Devens, Massachusetts.



FIG. 1. Lateral view of pelvis with barium enema and cystogram.



FIG. 2. Coiled spring metal ring in uterus.

Under general anesthesia pelvic examination was repeated and a uterine sound was inserted which met the foreign body in the uterus and the friction of two metal objects could be felt through the sound. In view of a very hard fibrotic cervix, the size of the ring and patients age and parity, total abdominal hysterectomy was thought to be the choice of treatment. On 29 June 1956 abdominal total hysterectomy was performed. A coiled spring ring was found in the uterus (Fig. 2). Post-operative course was entirely uneventful and patient was discharged from the hospital on the eighth post-operative day.

In the management of foreign bodies of the uterus, the two most important points are history and x-ray examination of the abdomen. In this case, patient was sure she had lost the ring twelve years ago and was reluctant to give a history of insertion of a foreign body in her genital tract. An intelligent patient is always aware of any foreign body in her vagina. A less intelligent patient

is more likely to be careless about these objects and give a confusing history. This emphasizes the importance of x-ray examinations. With a suggestive history of foreign body in genital tract, the first step should be a flat plate of the abdomen.

SUMMARY

1. A case of foreign body in the uterus of twelve years duration without any major symptoms is presented.
2. The importance of history and x-ray examinations are emphasized.

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Hydrops of Gallbladder in Cirrhosis of Liver*

By

ROBERT C. LAM, M.D., F.A.C.S.,† DONALD A. NEHER, M.D.,‡ JAMES C. STARKE, M.D.§

RECENTLY, two cases of hydrops of gallbladder were encountered at this institution. In both instances the presenting complaints were right upper quadrant pain, nausea, vomiting and tenderness. Both cases had a cholecystectomy. During operation it was observed that the hydrops of the gallbladder was a direct result of the compression of the cirrhotic quadrate lobe of the liver upon the ampullar region of the gallbladder, causing an almost complete obstruction. A search of the literature has failed to disclose any previous mention of this condition. Hence this report.

CASE 1

JEK-71572. This forty-four-year-old white male was admitted to the hospital on Jan. 10, 1956 because of right upper quadrant pain with a temperature of 100.2°F. He gave a history of right upper quadrant pain of three months duration, but he was apparently afebrile until the date of his admission.

The past history revealed occasional attacks of nausea and vomiting, chronic gallbladder disease, and addiction to narcotics, such as heroin, morphine, cocaine, opium, dilaudid, codeine, pantopon and methadone, from 1927 to 1954. The patient claimed that all the members of his family had gallbladder disease.

On physical examination he was found to be well nourished, apparently febrile and in acute distress. There was an exquisitely tender mass in the right upper quadrant, palpable to about 5 cm. below the right costal margin.

* From the Medical and Surgical Services, U. S. Penitentiary Hospital, Leavenworth, Kansas.

† Senior Surgeon, U. S. Public Health Service.

‡ Senior Assistant Surgeon, U. S. Public Health Service.

§ Senior Assistant Surgeon, (R) U. S. Public Health Service.

WBC was 8,300 with 45% neutrophils, 46% lymphocytes, 7% monocytes, 2% eosinophils; hemoglobin 16.2 gm., sedimentation rate 13 mm., hematocrit 49 ml. Urinalysis was essentially negative. Cephalin flocculation was 3 plus for 24 hrs., and 4 plus for 48 hrs.; thymol turbidity 16 units; total protein 7.1 mg. per 100 ml.; and an albumin-globulin ratio of 3.80/3.30. The gallbladder series revealed a very large gallbladder with very poor dye-concentration. The border of the gallbladder was seen lying at the level of the crest of the right ilium. After a fatty meal the gallbladder was seen to contract normally. The clinical impression was hydrops of the gallbladder and secondary liver change.

Initially, the patient was treated with gantrisin and streptomycin because of his allergy to penicillin. After three days of such treatment his temperature returned to normal and remained there. The upper quadrant pain, nausea and vomiting persisted, however, and were only relieved temporarily by gastric suction.

On Feb. 21, 1956 cholecystectomy was performed. There was a large, markedly distended gallbladder extending down to the right lower quadrant. The entire liver was much enlarged and nodular, the edges being rounded off with a yellowish tinge, grossly suggestive of cirrhosis. There was an accessory quadrate lobe of liver, somewhat cirrhotic, about the size of half a pear, pressing on the ampulla of the gallbladder. Otherwise, the gallbladder appeared to be normal in appearance, and no palpable calculus was found. On microscopic section there was edema of the wall of the gallbladder and numerous scattered mucosal foci of lymphocytes with intact mucosa. Biopsy of the liver was done. The pathological report showed marked distortion of hepatic architecture by bands of fibrous tissue and proliferating bile

ducts, extending from the portal triads and infiltrated by numerous lymphocytes. The diagnosis was early portal cirrhosis. The immediate postoperative course was satisfactory, but the wound did not heal well and eventually there was dehiscence. After the secondary closure on March 5, 1956 however, he made a satisfactory recovery and was discharged from the hospital on March 30, 1956. Subsequent follow-ups showed that the patient was completely relieved of his previous complaints and that he had gained 5 lbs. in weight one year following his operation.

CASE 2

HYN-71184. This patient, a thirty-four-year-old white male, was admitted to the hospital on Oct. 29, 1956 with the complaints of anorexia, fatigue, and skin rash over the anterior chest wall and the back. A history of hepatomegaly for several years was given.

During a previous admission (Aug. 25-Oct. 21, 1954) there was considerable telangiectasia over the upper trunk and extremities and an enlarged liver. The liver function was normal except for an elevated thymol turbidity and gamma globulin. The blood platelets, bleeding time, coagulation time and clot retraction time were all normal. The Rumpke-Leed was 1 plus, and the sedimentation rate was 41.

He had rheumatoid arthritis, diagnosed in 1943, with a history of painful and swollen joints, intermittent fever and weight loss, dating back to 1941. During his hospital stay in 1943, there was also evidence of low grade nephritis. He was treated conservatively and made a satisfactory progress.

The patient denied any drinking habit but admitted using narcotics, dating back to 1940 when he was afflicted with arthritis. Between 1940 and 1942, and again between 1945 and 1947, the daily average use of narcotics was about ten grains of morphine, heroin, or dilaudid.

Physical examination showed an extremely anxious, medium-slender man. The anterior chest wall, the back, as well as shoulders and arms, were covered with a heavy rash,

some areas of which were typical of the spider angiomas type. Heart was normal. Lungs were clear. Blood pressure was 150/100. A firm indurated liver edge was felt approximately 2 cm. below the right costo-vertebral angle. The spleen was just palpable below the left costo-vertebral angle. The prostate was moderately tender, especially the right lobe.

WBC was 6,100 with 30% neutrophils, 61% lymphocytes, 8% monocytes, 1% eosinophils; hemoglobin 13.5 gm; bleeding time 4:00; coagulation time was 7:40. Serum protein 7.8; A/G—4.35/3.45 with a ratio of 1.26; thymol turbidity, 24 units; bromsulphalein, 17% retention at 45 minutes; urea nitrogen, 8.9 mgs/100 ml.; cephalin flocculation 4 plus at 24 hrs.; prothrombin time 19 min. against 16 min. control with 63% activity. Urinalysis was normal.

Clinical Impressions: (1) Hepatosplenomegaly, etiology undetermined. (2) History of rheumatoid arthritis.

On Oct. 30, 1956, the patient was taken to surgery for liver biopsy. Upon opening the abdomen, the most striking feature was a markedly distended gallbladder, obviously caused by a small quadrate lobe of cirrhotic liver pressing on the ampullar region of the gallbladder. Other than the distension the gallbladder appears normal. The entire liver was markedly enlarged and presented a cystic and nodular appearance throughout. The spleen was enlarged to about three times the usual size. Liver biopsy was taken and cholecystectomy was performed. The pathological report on the gallbladder was negative. On microscopic section, the hepatic cells showed a sharp transition from normal to necrotic, with loss of nuclei, large vacuoles, altered cytoplasm, and a greatly increased amount of fat in large droplets in the abnormal hepatic cells.

Upon recovery from surgery, the previous complaints of anorexia, general fatigue, and right upper quadrant pain completely disappeared. The patient has been eating well and has gained 14.5 lbs. in body weight during the five months after surgery.

SUMMARY

Two clinically observed cases of hydrops of gallbladder are presented. The complaints were right upper quadrant pain, nausea, vomiting and tenderness. The gallbladders were markedly distended, without evidence of calculus.

At the time of surgery, there was found hydrops of the gallbladder as the direct re-

sult of compression of the cirrhotic quadrate lobe of liver upon the ampullar region of the gallbladder, which resulted in almost complete obstruction.

The causal relationship between the liver and the gallbladder in these cases was apparently mechanical. Cholecystectomy is the treatment of choice.



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Anorganic Bone—Chemistry, Anatomy, and Biological Reactions*

By

LLOYD A. HURLEY, M.D.†

AND

CAPTAIN FRED L. LOSEE, DC, U. S. Navy‡

(With four illustrations)

The first large-scale successful grafting of human and animal bones to the skeletal system of another animal is reported in this study. Bones from humans, cows and rats have been successfully transplanted into the hind legs of dogs. Success is attributed to the careful chemical cleansing of all marrow and bone filler containing proteins foreign to the host animal, the dog. Prepared bone is very white, easily shaped, and extremely porous. Its advantage over natural bone is that it is not subject to decay and can be easily sterilized by boiling or autoclaving. Absence of organic debris facilitates the host animal blood getting into the lattice work of the graft and rebuilding it to the animal's permanent needs. The authors believe that animal bone so treated could be stored for emergency use where human bone is unavailable.

INTRODUCTION

A SIGNIFICANT factor which has contributed to the broadening of the fields of orthopedic, plastic and reconstructive surgery in the past thirty years has been the introduction of the bone graft and bone grafting techniques. Even more could be accomplished in these particular fields if a source material for bone grafting could be more readily available. In the event of a national emergency, the availability of suitable preserved bone could become a serious military and civilian problem. We wish to report the preliminary results of experiments (conducted at the National Medical Research Institute) on animals, which were designed to test a technique by which the preparation and storage of a supplemental bone supply is easily accomplished. This

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† Harlan Memorial Hospital, Harlan, Ky.

‡ Naval Medical Research Institute, National Naval Medical Center, Bethesda, Maryland.

technique was first used by one of the authors (Capt. Losee) to facilitate studies concerning the problem of dental caries. It consists simply of a method whereby the organic matrix of bone can be removed leaving the inorganic matrix unaltered.

We felt that the various degrees of success and failure in bone grafting were accounted for, primarily, by the organic components of the bone and the extent to which they were altered in the process of preservation and restoration. We therefore set about a series of studies in which bone consisting only of the inorganic matrix was tested as a grafting material.

EXPERIMENTAL STUDIES

Chemical Phase. The bone used in this study was treated with ethylenediamine, to remove the organic matrix. The effectiveness of ethylenediamine as a solvent for the organic material in bone is demonstrated in Figure 1. This effect was more efficiently utilized by using a modified extraction apparatus (Fig. 2). Bone samples were inserted into this extractor within small glass

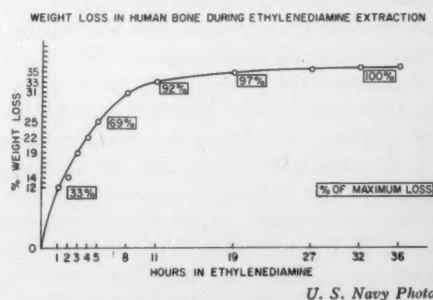


FIG. 1. Effectiveness of ethylenediamine as a solvent for organic material in bone.



U. S. Navy Photo

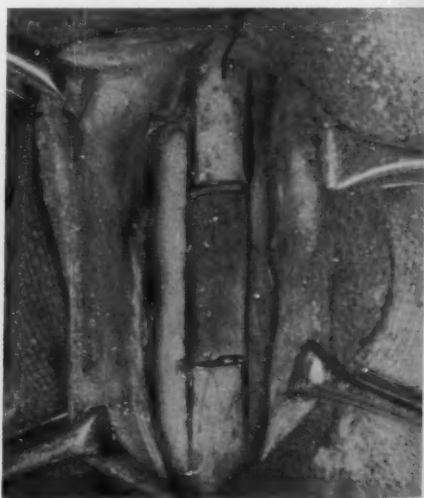
FIG. 2. Extraction apparatus.

spindles. The position of the bone in the extractor was such that the samples were kept within one degree of the cycling liquids temperature by the vapors of boiling liquid surrounding them. The constant boiling point of ethylenediamine is 117.5° - 118.50° C. The time for extraction was 32 to 36 hours for a single 5 gram piece of cortical femoral bone using 150 ml of ethylenediamine. This time could be shortened by prior removal of blood and fat with physiological saline and by routine fat extraction. Subsequent to the ethylenediamine treatment, the bone was rinsed several times with distilled water to remove the watersoluble ethylenediamine and carbonic acid salt of ethylenediamine formed from combinations of atmospheric CO_2 . This was followed by 6 one-hour water extractions with multiple room temperature rinses between each extraction. The washing was most crucial when bone was intended to be used for clinical work. Purity was checked by ultraviolet absorption spectra and pH determinations. Ethylenediamine has a characteristic absorption peak and is extremely alkaline. The extracted bone was either air-dried, dried in

vacuum or placed in physiological saline or alcohol for storage until ready for use. No attempt was made to keep the bone sterile as preliminary studies indicated that it could be autoclaved prior to surgery without altering either its structure or function. The used ethylenediamine was reclaimed to some degree by fractional distillation.

By analysis the bone, after ethylenediamine treatment and six water rinses, had less than 0.04 per cent nitrogen, yet the removal of the nitrogenous organic matrix was not concurrent with apparent change in morphology. Evidently, the organic matrix is needed for the maintenance of basic histomorphology and resistance to fracture that is tensile strength, but is not needed to retain crystal morphology and binding.

Clinical Phase. Adult, male, mongrel dogs, weighing between ten and eighteen kilograms, were used in this study as experimental "hosts" animals. A total of 87 tibial inlay grafts from autogenous and heterogenous sources were implanted. The animals were sacrificed at intervals of six, nine and twelve weeks subsequent to grafting. The grafts (Fig. 3) were implanted in the tibia of dogs anesthetized with intravenous sodium pentobarbital. The medial aspect of the



U. S. Navy Photo

FIG. 3. Graft implanted in tibia.



U. S. Navy Photo

FIG. 4. The 5 x 20 mm. tibial defect with implant in place; six weeks after implant. The view on the left is without periosteum; that on the right is with periosteum retained tightly over the defect and implant.

Periosteum reduces the size of callus. Rat, cow, dog, human, sheep anorganic bone implanted into the dog tibia reacted the same biologically.

tibia was approached through an incision measuring about eight centimeters in length. The saphenous artery, nerve, and vein were retracted and the periosteum overlying the bone was exposed. The periosteum was then incised, and gently stripped from the cortical surface. A rectangular cortical defect measuring five millimeters by 20 millimeters and extending into the marrow was made at the proximal end of the tibia about two centimeters below the anterior tibial crest.

The sides of the defect were cut simultaneously with a handsaw made with parallel circular metal blades fixed exactly five millimeters apart; the ends were cut with a small bone chisel measuring five mm. in width. The bone was continually washed with saline during the course of this procedure. After the graft had been placed in position, the periosteum was carefully reapproximated

with 000 plain catgut suture. The subcutaneous tissues were approximated with 00 plain catgut suture, and final skin closure was accomplished with inverted matrix stitches using 000 silk. The incisions were covered only by a thin layer of collodion. In some dogs, the hind legs were placed in a cast. Each dog was given 300,000 units of penicillin intramuscularly immediately after surgery and returned to clean, well ventilated animal cages. Bone grafts were followed radiologically with weekly radiograms. The grafted animals were also given weekly injections of alizarin red S, a dye which has an affinity for the region in which bone growth is taking place. Fourteen heterogenous grafts from rats to dog were studied. Fifty-two heterogenous grafts from cow to dog were studied, and sixteen heterogenous grafts from human to dog were accom-

plished. Autogenous grafts were also studied. Acceptance of the anorganic bone transplant regardless of species or source was demonstrated in all cases.

During the post-operative course in this group of animals, three traumatic fractures occurred, one case of osteomyelitis, and seven instances of wound separation; however when these animals were evaluated excluding the one case of osteomyelitis, no evidence of foreign body reaction, sequestration or lesser degree of revascularization could be demonstrated.

Radiologically the ethylenediamine treated grafts were noted to gradually diminish in degree of radio-opacity over a period of six weeks. In many instances it was impossible to determine by x-ray the site of the original defect or the boundaries of the transplant. This was especially true in cases where cancellous or chipped bone was used. X-rays and examination of the bone at the time of sacrifice indicated that callus formation had occurred.

An experiment in which the periosteum on one side was left unsutured clearly demonstrated that the amount of surface callus appeared to be dependent upon the care with

which the periosteum was reapproximated and with hemostasis was effected (Fig. 4). In all "anorganic bone" transplants a large degree of revascularization followed by perivascular absorption and accretion (remodeling) could be demonstrated.

SUMMARY

We feel that the results of this study have conclusively demonstrated the acceptance of "anorganic bone" regardless of species source (73 transplants). Bones from the same animal, or from other species (rat, cow, and human) were found to be accepted by the host and remodelled in a manner similar to autogenous grafts but apparently at a more rapid rate. In evaluating the acceptance of a graft we considered the following criteria: (1) lack of foreign-body reaction, (2) minimal callus formation, (3) mineral bonding between donor and host bone, (4) revascularization, and (5) remodelling (perivascular absorption and accretion).

We feel that "anorganic bone" is now ready for a clinical trial as a source material for grafting in everyday orthopedic practice, and have begun such studies at Harlan Memorial Hospital.



Prednisolone in Iodism—An Observation

By

LOTHAR WIRTH, M.D.

IODINE is essential to human life. In areas where, due to soil conditions, natural foods supply it in insufficient amounts, the prophylactic use of iodine has been widely adopted. It has become an integral part of radiological diagnosis and therapy as in the excretory contrast media and in radioactive iodine. It has found a wide range of therapeutic application.

It is unfortunate that the administration of iodides is not without hazards. Reactions may follow the intravenous administration of an iodide salt.¹ While prolonged oral use of an iodide in high dosage will eventually lead to symptoms of chronic poisoning or iodism in all individuals, there are also those who will early develop unfavorable reactions after only small amounts. The situation is particularly difficult to predict or to assess, as some people will not tolerate small doses, but do well when the dose is increased. Some of the more commonly seen symptoms of iodism are swelling of eyelids, increased salivation, swelling of the salivary glands, and acneiform eruptions.¹

Bromism and pellagra produce identical findings to those of iodism and do respond to therapy with niacinamide.² Arguing the similarity between bromism and iodism, Feinblatt administered niacinamide together with iodides and reported on freedom from untoward effects in about 110 cases where this regimen was used in over one year.^{3,4} Barefoot reported on the effectiveness of niacin in acne vulgaris. He assumed that niacin counteracted the ill effects on the skin of iodides and bromides which occur in foods.⁵ The thought is that iodides, like the bromides, may interfere with the oxidative functions of the coenzyme I and II systems. Niacinamide supplies the integral portion of these molecules and prevents interference by those halogens. These reports have induced me also to use iodoniacin (potassium iodide,

gr 2/13, and niacinamide hydroiodide, gr 5/13—Cole Chemical Company) in cases in which iodides were indicated. Recently I had occasion to see four patients who broke out with an acneiform eruption and one who came down with "mumps" while on such therapy. In one of these patients, a 40-year-old woman, who had, previous to therapy, a clear skin and a history of perfect skin all her life, the eruption cleared on stopping therapy and returned on resumption of therapy. The addition of a daily dose of 150 mg. of niacin to the iodoniacin tablets for two weeks did not prevent a recurrence of the acneiform eruption, nor did the addition of the same amount of niacinamide on a subsequent attempt although there was previous clearance of all those lesions.

The possibility that some of the symptoms of iodism may be allergic phenomena, as in acute iodide poisoning, was considered. It was decided to administer one of the steroids, prednisolone 5 mg. in conjunction with each iodoniacin tablet three times daily. This time the tablets were tolerated well and a skin eruption did not occur. The patient with "iodide mumps" (history of previous mumps in all glands) tolerated iodoniacin together with prednisolone well without reappearance of salivary gland swelling.

SUMMARY

The combination of niacinamide to iodide medication does not guarantee freedom from iodism in an individual patient.

The symptoms of iodism may at times be due to sensitivity of an individual patient to iodides.

The addition of prednisolone to iodoniacin prevented in one case the appearance of an acneiform eruption and in another case prevented salivary gland swelling.

82 Broadway
Rensselaer, N.Y.

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The U. S. Army Medical Service celebrated its 182nd Anniversary on July 27, dating itself from 1775 when the Hospital Department of the Army was organized.

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Autopsies and Identification of Bodies

By

JOHN H. SCHAEFER, M.D.

THIS article is for those doctors who have to perform an autopsy. It concerns certain commonly ignored or incorrectly recorded items of identification and one very important element which is rarely correctly estimated and recorded. No one can predict which case will become the subject of civil or criminal legal action.

It is somewhat rare for the pathologist to have been well acquainted with the person upon whose body he performs an autopsy. This being true, his recorded description of the body should be sufficiently complete and accurate in order to preclude serious challenge in connection with the report. The pathologist who considers any autopsy as "merely routine" and neglects these factors is most naive and is inviting trouble and embarrassment.

We are not here concerned with the more technical methods of identification such as dental charting, fingerprinting, and other items of police work. We are referring only to those items of identification which any physician can and should determine and record, using only his eyes, hands, a tape measure, and writing equipment.

Items of identification should routinely include apparent race, sex, apparent age, height, weight, color of hair, evidence of recent or old injuries or operations, bony abnormalities, scars, moles, tattoos, or other marks which might aid in identification.

A person reasonably familiar with the often overlapping characteristics of races should have no trouble with a hostile attorney on the matter of race. This is also true of *apparent* age. Height should be crown-heel height, not taking into account spinal curvature, if present, and should be recorded to the nearest half-inch. Attempts at closer measurement are ridiculous and can easily pave the way for unpleasant cross-examination by an attorney with some

knowledge of statistical method and probable error.

It must be remembered that hair is often dyed or bleached. The *apparent* color should be recorded. Thus the hair should be examined close to the scalp. Unless it has been bleached or dyed within a week or ten days, the proximal one or two millimeters will show the normal color, which must be recorded. Length of hair should also be recorded.

In my experience, physicians in general, pathologists included, seem to be incapable of estimating body weight within reasonable limits. I have not seen any who did not seriously overestimate. I was impressed with this as a Fellow in Pathology 33 years ago. An actual example follows. A man was admitted and hospitalized because of inoperable carcinoma of the stomach. Five weeks later he died and came to autopsy. He was obviously emaciated, but the estimates of weight were from 160 to 165 pounds. I pointed out that the scale weight on admission was only 140 pounds, that the deceased and I were both 69½ inches tall, that I weighed 140 stripped and was obviously much heavier than the deceased. In short, the estimated weight was at least 20, and more probably 30-35 pounds too high.

At the Coroner's Office, Los Angeles County, California, all bodies have been actually weighed since 1929. On one occasion I saw two men on adjacent tables. By coincidence they were both 75 inches tall and appeared to be about the same weight; but one, fat and flabby, weighed 20 pounds less than the other, who was lean and very muscular.

Aside from omissions, probably the most common error is to record something as being on the right side when the left side is meant. This error is easily made inasmuch as when the physician is facing the patient,

or body, the subject's left is the physician's right and is often so recorded. I have reviewed many records in which right and left were thoroughly confused. If the patient is alive such errors may be corrected. If dead and buried such confusion is often hopeless.

Several years ago a 67-year-old woman died of massive thrombosis of the right cerebral artery, based upon very severe generalized arterio-sclerosis. She was 62 inches tall and when last able to stand up for weighing, one year before death, weighed only 80 pounds. She had had an ankylosed right hip since childhood and the right lower extremity was $1\frac{1}{2}$ inches shorter than the left. Five years before death she had fallen and shattered the right femur so badly that open reduction and plating were necessary, at which time bone was borrowed from the crest of the right ilium. As a result there was a conspicuous scar 10 inches long on the outer aspect of the femur and a scar about 5 inches long over the crest of the right ilium.

The woman had been bedfast for eight months before death, had lost at least another ten pounds, and for several months be-

fore death was too weak to feed herself. At death she was badly emaciated.

The pathologist in his report recorded the weight as "about 115 pounds," and stated that there were "no scars or bony abnormalities"!

If the physician who performs an autopsy overlooks or incorrectly records facts which are obvious or easily ascertainable, and is subsequently called into court as a witness, a smart attorney, and there are plenty of them, could get the facts elsewhere and then bring out the indisputable fact that the physician overlooked them. With that as a background, he could completely discredit any other testimony given by the doctor.

I can hear the attorney: "Ladies and gentlemen of the jury, I ask you—If this doctor overlooked the ankylosed hip, the short leg, these conspicuous scars, and if, as is apparent, he overestimated the weight by 45 pounds—64 percent!—*how* can you believe ANY of his testimony?"

So, if you have to perform an autopsy, be sure that you accurately and adequately describe the body. It may save your reputation.

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Los Angeles 17, Calif.



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Civilian Physicians at a Naval Industrial Activity*

By

CAPTAIN CHRISTOPHER C. SHAW, MC, U. S. Navy

(With two illustrations)

THE extent of the industrial endeavor within the Department of Defense has received little publicity. Nonetheless, it is a matter of record that more than one million civilian personnel are employed by the Department of Defense; indeed, this means that "Uncle Sam" is the largest industrial employer in the world. It is also true that the United States Navy provides jobs for more than four hundred thousand civilians. This is a greater enterprise than that represented by General Motors, DuPont, General Electric, Ford Motor Company or any other industrial giant in America. Approximately 125,000 to 150,000 civilians are employed by the Bureau of Ships, depending on the intensity of the work-load at the eleven Naval Shipyards located in Portsmouth, New Hampshire; Boston, Massachusetts; Brooklyn, New York; Philadelphia, Pennsylvania; Norfolk, Virginia; Charleston, South Carolina; Long Beach, San Francisco and Mare Island in California; Bremerton, Washington and Pearl Harbor, Hawaii.

Because of the critical shortage of military medical officers, the Secretary of the Navy on 13 August 1954 authorized the employment of civilian physicians at Naval Industrial Activities. Determination of the number of civilian physicians and the adequacy of their qualifications was delegated the following month by the Bureau of Medicine and Surgery. Early in October 1954 the Bureau of Ships implemented the directive of the Secretary of the Navy (SECNAV INST 6260.1 of 13 August 1954 and BUMED INST 6260.3 of 24 September 1954) and

The opinions or assertions contained herein are the private ones of the author and are not to be construed as reflecting the views of the Navy Department or the naval service at large.

*From The Medical Dispensary, Philadelphia Naval Shipyard, United States Naval Base, Philadelphia 12, Pennsylvania.



U. S. Navy Photo

MAIN DISPENSARY, PHILADELPHIA
NAVAL SHIPYARD

directed that the eleven Naval Shipyards under its cognizance immediately initiate steps to employ desirable civilian physicians.

The writer for the past two years has served as The Medical Officer at the Philadelphia Naval Shipyard and has been intimately associated during this period with the problem of recruitment, screening and employment of civilian physicians to work in the Medical Dispensary at Philadelphia.

As soon as the authorization for the employment of civilian physicians was received from the Office of the Secretary of the Navy, a series of intramural conferences was held to establish guide lines and ground rules in the case, since there was no previous experience and therefore no precedent relative to this problem.

The day following receipt of the directive from the Chief of the Bureau of Ships to put the plan in operation, three interviews were held with civilian physician candidates. Within 48 hours an official news item was released by the Public Information Office, Headquarters, FOURTH Naval District for distribution to local newspapers and periodi-



U. S. Navy Photo

CIVILIAN AND MILITARY MEDICAL OFFICERS AND MEDICAL SERVICE
CORPS OFFICERS, PHILADELPHIA NAVAL SHIPYARD

Front Row (L to R): Drs. C. Wickert; H. Booth; R. Levin; A. Ralph; C. Lytle; H. Feldman; C. Dougherty.

Back Row (L to R): Lt. S. Meyers (MC); Lt. W. Boyle (MC); Capt. J. Gillen, Jr. (MC); Capt. C. Shaw (MC); Lt. R. Roberts (MSC); Chief Warrant Officer C. Duke (Med.).

cals. No funds were available to defray the cost of an advertising campaign and therefore no advertising was undertaken other than in the form of news items as noted above and as "progress notes" in the *Pennsylvania Medical Journal* and in *Philadelphia Medicine*.

The Bureau of Ships estimated that a minimum full-time equivalent of ten civilian physicians should be recruited and hired at the earliest date by the Philadelphia Naval Shipyard. The first civilian physician was employed on 6 December 1954 and by 1 May 1955 the "quota" of ten civilian physicians was filled. Thirty-eight interviews were given to prospective civilian physician candidates during the first six months and thirty-two additional doctors were "screened" during the past year.

Our experience to date now covers many months and by and large has been quite satisfactory. Three years ago in the summer of 1954, there were ten military medi-

cal officers aboard and no civilian physicians on the payroll of the Medical Dispensary at the Philadelphia Naval Shipyard. At the time this is written in February of 1957 the number of military medical officer billets has been reduced to two and there are eleven civilian physicians on board, ten of whom are on full time employment (40 hours per week) and one is on part-time duty (20 hours weekly). Since inception of this program, however, a total of 19 physicians (including the eleven currently employed) have been on the payroll at the Philadelphia Naval Shipyard. Nine civilian doctors have resigned of their own accord: two because of employment elsewhere, six to continue private practice on a full-time basis, and in one case resignation was accepted because of inadaptability. By and large, cooperation of civilian physicians with military doctors has been excellent. There has been little or no friction between these two categories of professional men and the civilian doctors have

adjusted well to the requirements of both civilian and military sick call.

The civilian census at the Philadelphia Naval Shipyard averages approximately 10,000 people of whom some 650 to 700 are females. The military census varies from 4,000 to 5,000 officers and men depending upon the number of ships in port for repair, overhaul and modernization. Nonetheless, military sick call exceeds civilian sick call by a ratio of approximately 3 to 1 and it is therefore necessary for civilian physicians to treat military patients, especially since there are now only two authorized duty billets for military medical officers at the Dispensary and sick call averages between 250 to 300 patients per day.

The question of authorization for civilian doctors to treat military patients has been carefully considered and discussed at some length. On 22 November 1955 the Chief of the Bureau of Medicine and Surgery indicated that civilian physicians employed by the Navy are not authorized to sign reports and forms having to do with promotion, commissions, active duty, or flight physical examinations; neither can civilian doctors sign the reports of medical survey boards, clinical or physical evaluation boards, nor serve as members on Boards of Medical Examiners required by the provisions of the Naval Supplement to the Manual of Courts-Martial. It is a matter of record at the Philadelphia Naval Shipyard that such reports and forms have not been and are not signed by civilian physicians, nor do they serve as members of statutory boards. All such reports, forms and health record entries are signed only by a military medical officer.

On 22 June 1956 the Surgeon General reported by "Memorandum to all Officers of the Medical Department" in volume 27 of the *United States Navy Medical News Letter* that the program for utilizing civilian physicians in naval industrial activities has expanded to the point where 70 civilian doctors are on the payrolls at various industrial facilities.

When this civilian doctor program was initiated in the fall of 1954, the Bureau of

Ships stated that personnel services of civilian physicians are under the technical control of the Bureau of Medicine and Surgery. Payment of the salaries of these civilian doctors is negotiated by the Navy Industrial Fund, which is reimbursed by the Bureau of Medicine and Surgery. At that time and again in July of 1956 the Bureau of Ships reiterated the "ground rules" for recruitment of civilian doctors by one of three methods: (a) regular Civil Service Appointments to classified positions, (b) employment of experts or consultants under personal service contracts and (c) contracts for nonpersonal services. At the Philadelphia Naval Shipyard civilian physicians have been employed only by means of regular Civil Service Appointments. The "grades" awarded are as follows: three GS-11, seven GS-12 and one GS-13. Current starting salary rates on a fulltime basis in each bracket are \$7,465, \$8,645 and \$10,065 before taxes. If a doctor works on a part-time basis (20 hours a week) he receives 50% of the current salary scale compatible with his "grade." No written professional examinations are required for appointment of physicians in the Government Civil Service. The doctor selected must have graduated from a Class A Medical School (as categorized by the Council on Medical Education and Hospitals of the American Medical Association), have completed at least one year of internship, hold a license to practice medicine and/or surgery in Pennsylvania or New Jersey (or equivalent State Board of Licensure) and be a member of his community in good moral standing. Personal interviews for candidates were conducted by an informal professional board, the Senior Medical Officer serving unofficially as Chairman, and separately by the Industrial Relations Officer or his employment representative.

In order to provide a more flexible program to cope with the rapid turnover of civilian physician personnel, a total of 18 billets have been authorized for civilian doctors at the Philadelphia Naval Shipyard. Twelve are full-time appointments and six are on a part-time basis. However, we have not been

able to obtain more than 11 civilian doctors for any one period, even though there are five medical schools located in Philadelphia. The majority of our civilian physician employees are young men; two are in residency training in Philadelphia Hospitals, two others are mature career physicians in the Government Service, while seven younger doctors have recently completed their residency training and are about to open their private offices. As their private practice increases and their time becomes more remunerative, their interest in industrial medicine lags and sooner or later they leave Government employment of their own free will and accord. For example to supply eleven active civilian medical billets and keep our quota replenished, it has been necessary during the past 24 months to hire 20 civilian doctors and to release nine of them at their own request.

In resigning without stigma or prejudice, the nine doctors stated that they enjoyed the experience in military medicine and profited by association with a Naval industrial activity but that the Civil Service pay ratio is entirely inadequate compared to a physician's earning power in civilian private practice. The cream of the younger medical crop simply will not accept Government employment at current salary ceilings.

It would appear logical that the only way to secure top-flight physicians, to reduce this rapid turnover of professional talent, and to keep good doctors on the payroll is to reward

them according to their ability and productivity. This could be done, presumably, by augmenting their remuneration in proportion to their earning power in private medical practice or by increasing their "wages" comparable to those lucrative salaries paid to physicians by private industry or commerce, which are better than GS-14, GS-15 and GS-16 Government Service Appointments.

SUMMARY

During the past two and one-half years, the civilian physician program has operated satisfactorily in Philadelphia because of the large pool of medical talent available in this metropolitan area, which is occasionally called the "Medical Mecca of America." However, the stability of the program leaves something to be desired because of the high attrition ratio among civilian medical personnel who are not satisfied with currently authorized salary ceilings. Nonetheless, our experience with civilian doctors working in the Medical Dispensary of the Philadelphia Naval Shipyard continues to be encouraging, pleasant and productive.

This program exerts a salutary effect on the morale of medical officers on active military duty because it is providing a practical solution to one of the problems surrounding the critical shortage of medical officers and because it holds high promise of providing adequate and modern medical care in the Navy's gigantic industrial endeavor.



New Horizons in Preventive Dentistry: The Public Health Point of View*

By

THOMAS L. HAGAN, Dental Director, U. S. Public Health Service†

INTRODUCTION

IN THIS discussion of expanding horizons in preventive dentistry from the public health point of view it seems essential to identify our understanding of preventive dentistry and to discuss briefly some of the factors which contribute to the public health point of view.

Preventive dentistry connotes the use of technical procedures which reduce the occurrence or consequences of dental diseases and conditions. In the first instance, the procedure may be prevention in the strict sense in that it prevents or retards the inception of the disease or condition. An example is the topical application of fluorides for caries prevention. In the second instance, reducing the undesirable consequences of dental disease is prevention in a broad sense. The initial attack of dental disease is not prevented but, through the use of corrective measures, its extension is prevented and its sequelae reduced in quantity and in quality. For example, regular and systematic filling of carious teeth avoids complex operative service and prevents the loss of teeth. Or, serious malocclusion problems may be intercepted by timely orthodontic interference. This concept of preventive dentistry usually relates to the care a dentist provides a patient.

On the other hand, the public health approach considers the group or the community as the unit for treatment. Frequently the technical procedures used in public health work are the same as those provided by the

private practicing dentist, although the method of application may differ. Whereas the private dentist serves any person who calls on him, the public health program promotes the use of control procedures in the groups where the greatest long range benefit will accrue. We know, for example, that the consequences of dental caries are more effectively controlled by beginning dental care at an early age. Therefore, emphasis is placed on the younger age groups, either for direct clinic services or the promotion of their referral to private services.

Another important difference is the locale of public health services. Almost always the program is taken to the community or the group. The activities are located where the greatest number of people may be benefited, whether by technical procedures or by health educational services.

And still another difference is concerned with public information about the health needs of the community and availability of health services which the public health program offers. Since the public health program views the whole community as its patient, it can ethically communicate to the community concerning the services it has to offer. In the private practice of dentistry the dentist can advise the patient of the services he has to offer only when the patient has made the initial effort. In contrast, effective public health work does not wait for the community to take an initial action but stimulates interest and develops support to solve a particular or a general health problem.

There are clear similarities between the provision of preventive dental services by the private dentist and by the public health group; and there are quite distinct differences; and there are grey areas that have features of both. Yet, just as understanding

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† Assistant Chief Dental Officer, U. S. Public Health Service, Department of Health, Education, and Welfare, Washington 25, D.C.

the individual's dental needs, planning a sound course of treatment and providing the treatment effectively are essential to good individual patient care, so are the counterpart situations with respect to dental public health services.

These counterparts in dental public health work are the determination of the extent of dental needs in the community, the selection and adoption of methods to meet the needs, and the application or development of resources to apply the methods. Essentially these features of community examination and treatment are engaged when and if the community recognizes its need. And just as patient education is an important element of good dental practice, so it is essential for public health practice to provide information to the community about its dental needs and to suggest suitable steps it can take to correct them.

To see some of the opportunities that lie in the middle distance rather than on the far horizon, we might look at the needs in dental research, at procedures which measure the impact of dental disease on our people, at the potential that exists in auxiliary personnel, and finally at the effective community application of preventive and control measures.

EXPANSION OF RESEARCH AND DEVELOPMENT OF CONTROL MEASURES

Rather than review the present technical knowledge on the cause and control of particular dental disease, let us consider some aspects of dental research and development which have immediate as well as long range potential. First and most important is people, people of inquisitive mind and the will to venture into the unknown. It is not an easy task to acquire people with these characteristics and to nourish and stimulate their skills. Immediately we can see the need to study methods for their development and to provide additional financial support to carry on research. These three facets—men, money and methods—are so interrelated that it is difficult to consider one without the other.

Let us take a look at money—money that has gone into research work—and its relative importance in the field of dental education. During 1950 forty dental schools had budgeted for research the sum of \$733,000, as against total operating costs of 15.7 million—a ratio of 4 dollars for research to \$100 for teaching and administration. In medical schools, the ratio was \$30 for research to \$100 for total school support. Comparisons, of course, can be odious and we should determine our course more by our own weaknesses than by the strengths or weaknesses of others. The hard fact is that while money is a powerful and essential instrument for getting things done, the real need is for men—and particularly men with an understanding of research methodology and the willingness to pass this knowledge along to students.

The recent expansion of the dental research grants and fellowship program of the National Institute of Dental Research marks a significant advance in the support of research which undoubtedly will create a heightened consciousness of dental research that can have far reaching results. It provides for a wide range of support for dental research projects and for dental research workers and, of much greater importance, it provides a stimulus to students to enter the field of research or teaching. The combinations of financial support that can be provided dental schools or other institutions should do much to broaden our knowledge and expand the number of research workers. Furthermore, as the program moves into high gear in his dental school, the student may by "osmosis" acquire a better understanding of the objective approach that is the scientific method, that is, the pattern of relationships among hypotheses, deductions and experimental verification. In such an environment he will be better prepared to assume his full professional responsibilities, whether his interests lie in research, teaching, public health or clinical services. This environment will engender the critical spirit of all scientific thinking—a broad view with

certain common goals, such as a skeptical attitude toward accepted results, objectivity of claims and a willingness to follow evidence and logic wherever it leads.

Lest we lose the public health point of view among the more obvious research areas that lie in biological science, we must recall that the words "public health" connote a product that is health and a recipient that is the public. The most complete understanding about one is pointless without corresponding information about the other. As Leavell points out, "Two major types of changes with which public health must deal are going on in the modern world: 'public' changes and 'health' changes. Our professional training helps us most with the health changes . . . yet public changes are often of even greater importance than health changes . . . we need a great deal more research to be able to translate the findings of biological investigation into social application. When we meet a health problem, we must recognize that two kinds of diagnosis and treatment are necessary. We must understand and deal with the health problem. We must also understand and treat the social or public part of the situation. Our pharmacopeia in both fields must be strong. It is no longer sufficient to prescribe drugs or treatment and neglect the social factors in a given case."¹

If the findings of biological investigation are to be translated into community action and not simply collect dust on a library shelf, it seems essential to apply scientific analysis to methods of application. Our traditional attitude of letting the public seek us out, issuing instructions and letting the patient take it or leave it, is out of fashion in public health work. Surely an extremely important horizon only partially explored is the investigation of consumer reaction to the product we call health.

The importance of understanding and exploring public attitudes about health cannot be over-emphasized. One of Osler's aphorisms is quite pointed: "on the neglect of the study of the humanities, which has been far

too general, the profession loses a very precious quality." We need to understand that a community reacts in one way to those things it sees as necessities to health and perhaps in quite another way to what the public health expert sees as necessities. We need to recognize that a community places a value on health service in competition with other goods and services and that dental health has its priority rating among health needs. It is imperative to gain more understanding of the value of dental service as communities see it, in order to build better informational programs. We need to recognize that unless there is an exchange of understanding between those who offer and those who receive, there is at best poor provision of service.

And finally we must understand that a community reacts to its health needs in direct relation to the realism of planning. When the concepts, values, understanding and resources within the community are disregarded or given insufficient consideration, the outcome of a program is doomed to failure. Certainly the individual patient dislikes in a private dentist any lack of appreciation for his complaint and will probably seek service elsewhere if treatment planning is haphazard or outlined without regard for his interests or desires.

INDEXES TO MEASURE DENTAL DISEASE

The importance of knowing when, where and under what conditions cases of disease are arising cannot be overemphasized. Yet at present it is possible to identify and describe with reasonable accuracy the attack of dental caries, dental fluorosis, oral clefts and cancer.

The lack of suitable descriptive tools is a major deterrent to a better understanding of the epidemiological characteristics of other conditions. It was not until after the DMF index to describe caries experience was developed and refined that the subjectively observed lower caries attack rate in fluoride areas was confirmed. And the determination of the optimum level of water borne

fluorides for caries reduction was not possible until a suitable fluorosis index was available. Not only are indices essential in the research phase of disease prevention, but from a public health point of view they are essential in demonstrating to communities in tangible terms the reduction in disease or at least a beneficial lessening of undesirable consequences. This kind of public health accounting is required if community support for dental programs is to be gained and maintained.

The development of suitable measures to assess periodontal disease attack lies ahead of us. Some of the perplexities of this developmental effort are worthy of mention. First, the condition probably is not a single entity, and second, its etiology is complicated by local as well as systemic factors. Various attempts have been made to describe its characteristics at different stages of attack. The PMA index affords a description of the extent and severity of gingivitis in children. Other assessments take into account the number and severity of periodontal pockets or the amount of localized and generalized bone resorption. X-ray examinations or clinical measurements of pocket depth by the use of probes are used as determinants of grades of severity of periodontal disease. Reports on the prevalence of periodontal disease that utilize like-tools of measurement or that reveal any uniformity in their findings are remarkably absent in the literature. Each investigator has found it necessary to develop his own descriptive criteria. Yet, out of the considerable effort now underway in this field, we can see some glimmer of hope that a standard reproducible objective measure for periodontal disease attack is on the horizon.

With respect to malocclusion a similar situation exists. Efforts have been made with only limited success to apply Angles' classification of malocclusion to groups. Another effort added a count of malposed teeth to indicate severity of malocclusion. Another employed a subjective assessment as to immediate need for orthodontic care. And another utilized anthropological measure-

ments of the face in combination with other manifestations of occlusal deviations. The rather extensive clinical and public health interest in developing quantitative measures of dento-facial deformities is good evidence that in the not too distant future more adequate guides will be available. Unless prevalence can be measured—unless an index of occurrence is available—any change or difference in attack merely is noted as a subjective observation, not an objective assessment.

MORE EFFECTIVE UTILIZATION OF PERSONNEL

The use of auxiliary personnel in the health field has had a remarkable growth during the past 25 years. Witness the direction which the professional hospital nurse gives to a coordinated team of auxiliaries—the practical nurse, the attendant, the orderly, the ward maid, the receptionist and the secretary. In public health work, the basic staff of the physician, public health nurse and sanitary officer now is augmented by the public health educator, the sanitarian, the psychologist, the social worker, the records analyst, the statistician, and the public health administrator. It is apparent, I think, that many of these individuals possess training and experience in a discipline which should not be termed auxiliary to another discipline. Yet in our present concept of public health work we continue to consider the technically health oriented persons the focus about whom activities are centered. Regardless of semantics, the productivity and effectiveness of the work of the so-called auxiliaries is now an accepted fact.

With respect to dental activities, whether oriented to clinical service or to public health work, we cannot see a parallel development of this magnitude. Yet the effective utilization of dental manpower demands development of the potential that exists in auxiliary personnel. Adding numbers of dentists to our ranks is essential, but this is a costly and time-consuming effort and sidesteps the real issue—how to use dentists in those facets of work where their professional activities are

not diluted by efforts which can be delegated to others.

There are several groups of people whose effectiveness has been demonstrated but not fully used. There are other groups, particularly in public health work, whose skills should be developed or adapted to dental program operation.

First, let us view the work of persons now readily recognized as dental auxiliaries, consider how their potential might better be utilized in the dental public health field and give some attention to desirable methods of training them for their work. Second, let us consider the utilization of still other disciplines not now recognized as being actually or potentially adjuncts to dentistry.

The office girl has been an auxiliary to the dentist for many years. Her functions generally have been to serve as an intermediary between the dentist and external distractions—the telephone and the waiting room—and hence she has not effectively served the dentist as an extra pair of hands in the care of patients. More recently a concerted effort has been made to utilize her in operating situations to relieve the dentist of many extraneous motions which are a part of—although not in the strict sense—the care of patients. A direct parallel may be drawn between the operating room nurse and the physician. Preparation of the patient, arrangement of necessary instruments and supplies, participation in operating procedures, assistance in patient management—all are broad areas of work in which the effective dental assistant is engaged.

Yet no matter how well a dental assistant is trained in the details of her work, little is accomplished if the dentist fails in her full utilization. There exists real need for the training of dental students in the wise utilization of the dental assistant. This presents a multitude of problems to the dental educator, but if this group of auxiliaries is to be used effectively, dentists must be trained to use them. A bright spot on the horizon is the increased interest among dental school administrators in developing this skill in dental students.

The duties, responsibilities and limitations of the next group of auxiliaries, dental hygienists, are spelled out quite clearly in most State Dental Practice Acts. Although the technical background she possesses admirably fits her for dental health educational activities in public health programs, to assume this role she will require additional training in public health methodology and particularly in the principles of community organization and education. Her precise functions in dental public health work must be developed and demonstrated. However, it seems clear that the future offers the dental hygienist a wide variety of dental public health activities other than those restricted to the dentist's office either by law or by custom. The dental hygienists' profession was founded because of a recognized need for patient education. Because her technical training approximates the content of the training of a dentist, she possesses great potential for contribution to the dental public health program.

Given additional training in educational techniques and in group organization, there is no reason why her special skills should not be employed in a broader environment, the community. Augmentation of her technical training will enable her to carry on, in addition to her traditional duties, such activities as demonstrating preventive procedures, participating in maternal and child health conferences, planning and organizing community dental programs, serving as a resource person in dental matters to the health department, collecting and maintaining appropriate records on the dental status of the community, and developing and utilizing valid technical health education media. In some few instances, individual dental hygienists have demonstrated their ability to perform these functions. The future holds great hope that this important group of auxiliaries, if called upon by the dental and health professions, will make a major contribution to community dental health.

The next broad group of personnel includes a number of disciplines whose functions can be expanded or, perhaps more pre-

cisely, whose skills and knowledge may be applied to the planning and operation of dental programs. We mentioned earlier that the basic technical public health staff is augmented by statisticians, program analysts, public health administrators, health educators, nutritionists, and social scientists. Each of these people has a potential that can be tapped for improving dental public health programs but this potential has hitherto been used only occasionally and somewhat superficially.

For example, the statistician's competencies should be utilized at all stages in the planning, development, operation, evaluation and reporting of any public health project, whether a continuing program operation or a specific research study. The public health analyst can assist in defining precise program objectives, in developing and applying sound administrative practices, in utilizing and evaluating procedures to cope best with major problems, and in the development of such program tools as operational manuals and scheduling procedures. The social scientist can assist the program administrator in the definition of problems from the point of view of human behavioral factors. Meltzer makes the point that: "Experience in one situation can only suggest the reasons for success in that particular situation. We in public health work have an unfortunate habit of talking and writing only about our successes, ignoring our failures and seldom examining the principles we were trying to use when we failed. It does little good to study the methods that led to program success in one community, if we forget that the identical methods have failed miserably in other similar communities. When that happens, it is a case of using methods based on untested assumptions, rather than on sound principles."²

We could continue to spell out the manner in which these auxiliaries can be of assistance. The point to be made is that, in the face of a dire shortage of the primary professional personnel, every effort should be made to delegate work and responsibility

to individuals capable of carrying on routine activities and possessing the training and insight to broaden the base of our knowledge concerning the application of dental public health procedures to more people.

COMMUNITIES' APPLICATION OF PREVENTIVE MEASURES

Until procedures and practices which control or prevent dental disease are applied, the full benefit of scientific advance does not reach the consumer. It seems quite logical that the first step is to array all of the available and tested tools, to weigh their practical usefulness and, within the available resources, to rank them in a priority order. Their application, of course, must be related to the problems of the particular group concerned. For example, in a school child population the principal dental disease problem is dental caries. Tools available to resolve this problem are community water fluoridation, topical application of fluorides, efficiently provided reparative services, and certain personal practices, such as restriction of sugar intake and timely and proper toothbrushing. Yet it is one thing to state authoritatively the worth of these tools and quite another to apply them.

The application of specific technics may be started through programs designed to demonstrate their community application and/or to train and orient personnel. For example, the effective use of dental assistants has been demonstrated in community programs—yet the surface merely has been scratched as far as widespread usage of these auxiliaries is concerned. Another example concerns the use of the team approach in cleft palate-harelip rehabilitation. Several excellent facilities provide for the effective collaboration of surgeons, prosthodontists, orthodontists, speech therapists and psychologists. Yet this approach is not available to many unfortunate infants born with this defect in many parts of the country.

Another group of patients, coming to the fore as a result of our aging population, are the chronically ill. From a public health point

of view, the increasing size of this group of people and the multiplicity and complexity of their conditions and environments, poses a problem that is formidable. We must face the fact that many people saved from premature death live for long periods of time with chronic incapacitating illnesses. They do not remain in acute illness hospitals, but move rather into custodial institutions, nursing homes or remain in their own homes. Too frequently dental care is denied these people because the service is not physically available. An extremely important corollary is that attention to the primary disabling condition overrides the importance of auxiliary or supportive services such as dental care. Another impediment lies in our method of practice—assuming that the patient will come to the dentist, usually in a private office, sometimes in a hospital clinic, and almost never in any other environment. And still another factor is cost. Dental care is expensive, and this feature complicates the catastrophe of a long-term illness or disability.

What, then, are some of the horizons requiring exploration in this growing and somewhat perplexing problem that is new to dental practice? In a few words, perhaps we must abandon our isolationism and integrate our own services into community efforts which help the patient return to society. This may require the reorientation of a small portion of the dental school curriculum to provide formal classroom instruction and clinical experience in the provision of dental service to the patient with a long term chronic illness. We need to study the relationship between certain dental services and their effect on patient well-being. We need to develop specialized equipment and treatment techniques which take dental service to the patient. And finally, we need to experiment with methods of financing programs for providing dental care for the chronic ill.

These examples are cited to emphasize that, although methods to meet some of these needs are available, a wide gap exists be-

tween the knowledge and its generalized application. The methods must be demonstrated and personnel trained to carry them out. We could go on with examples but suffice it to say that one of the chief needs in the whole field of preventive dentistry is closing the gap between the development of control measures and extending their benefits by program establishment.

Although technics and satisfactory personnel usage are important, public health programs do not and will not be effective without a satisfactory level of awareness in the community of the problem they seek to solve, a reasonable agreement that the available methods are satisfactory and an appreciation that the methods in fact will solve the problem. Public awareness and interest in dental health in broad terms appears quite firm. About one-sixth of the medical dollar is spent for dental services by the American public; that is 1.6 billion dollars of a total of 10 billion for all health services. Yet survey after survey show the status of dental health to be at a low level in almost all segments of our population. A thorough-going effort is being made by the Navy at the Bainbridge Training Center to learn more about some of the cultural, economic and social features of this situation among recruits.

Although a vast amount of written and visual material is in use to promote better dental health practices, their real worth as motivating influences is not clear. In this field, too, there is a need to study and develop approaches which take into account the perception of the individual (or community) of the problem of dental disease, the agreement that prevention or control of dental disease is desirable, and a full accord with the methods and procedures available to solve the problem.

The final aspect of community application of preventive and control measures is the evaluation of operating programs. Arraying the knowledge and practices for preventing and controlling dental diseases, the conduct of demonstrations, the training of personnel,

the development of community awareness and the provision of health information each requires an answer to the very difficult question—to what end is this effort made? If there is one paramount need in the expanding field of preventive dentistry, it is the continuous testing of each and every effort we make, answering the question, to what end is this effort? If the activity does not have a real goal, then it simply becomes purposeless activity.

In conclusion, then, let us attempt to lift the smog of complacency with our highly developed technical skills in operative dentistry. Of course, we can take justifiable pride in having made greater use of the

basic sciences in our search for better control technics, for having utilized the epidemiological approach to the study of the characteristics of dental diseases, and for having developed procedures to prevent one dental disease. Yet, it seems that future advances will be accomplished by some changes in our approach to dental education, by expanded dental research and through a broader application of our available knowledge.

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A Therapeutic Community—As a Nurse Sees It*

By

LIEUTENANT COMMANDER LINA STEARNS, NC, U. S. Navy

A YEAR-AND-A-HALF AGO, following a trip to England, Doctor Harry A. Wilmer began a type of therapy called "The Therapeutic Community" on the locked admission ward at the U. S. Naval Hospital, Oakland, California. Part of this therapy consisted of a large ward meeting, each morning, of all patients and staff, Monday through Friday. This was followed by a half-hour staff meeting. In addition, there was a small patient group, and patients were seen individually. The part that was new to us was the big group and its philosophy—a philosophy which elevated the role of the patient—one in which all patients were expected to be a member of the group (no quiet rooms were used), patients were expected to help each other, and the staff.

Now that not only the admission ward, but all of our wards, have at least some kind of combined group for patients and staff, it has been dubbed "The Big Group." Again, the Big Group does not constitute the total therapy or the entire administration but forms the background for the therapeutic setting.

THE BIG GROUP

These groups can best describe themselves, and three fairly recent groups were as follows:

The Quiet Room

The locked admission ward had run for months not using a quiet room. Then one night the medical officer admitted a patient to the quiet room. The next morning the

daily community group included the staff and all patients except the patient in the quiet room. The ward medical officer opened the meeting by asking if the group knew that there was a patient in the quiet room. They did. The doctor then asked how they felt about it. One patient said, "I was in a quiet room once, and I say bring him out." Another said, "Doc, can you guarantee he won't be dangerous?" The doctor said "No." He couldn't guarantee anything, but that it depended on whether they thought they could accept the patient and try to help him. More talk back and forth among the patients. They didn't really feel they were afraid of him when they were awake, but that it might be different at night. Finally, the patient who wanted the doctor's guarantee that the new patient wouldn't be dangerous, settled it to the satisfaction of all. "Bring him out, Doc, and we'll have him well by night." This patient then not only had the support of the staff but of all the patients. Following the group the patient came out on the ward and made a good adjustment.

An Administrative Decision

Following a brief sick call the patients and the staff brought up their chairs and sat in a group with the ward medical officer. There was a period of silence, and after a few minutes the ward medical officer said, "Well, if the patients have no particular problems they want to bring up today, the staff has. We want to make this an open ward, and we want your help (patients) in planning and carrying it out. Whether we are able to do this successfully depends on the willingness of everyone to make it work." Another short silence, in which the staff felt pride in the way the ward medical officer had approached the problem, and a growing sense of pride in the patients as they realized that their help and support were

From the U. S. Naval Hospital, Oakland, California. The opinions contained herein are those of the author and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at Large.

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needed to make the opening of the ward possible; that they were really opening their own ward.

The details of running the ward as an open ward were worked out in that meeting. The patients politely but firmly told the staff that they would see that the ward was kept clean, and it was decided that anyone who did not feel he wanted to contribute to the smooth running of the ward and the welfare of the ward population would be given the opportunity to express his feelings in the daily group.

A Suicide

Convalescent male officer and female ward. The day before, the body of an officer patient who had committed suicide had been found. All the patients and staff were present at the group next morning with the exception of one patient who had been very depressed and sent to the closed ward prior to the group meeting. One female patient was crying, and the expression on the faces of all patients and staff was strained. The patient's doctor who had been at the autopsy and the investigation all of the previous afternoon, opened the group by saying, "Many of you know of the death of ——— and I will tell you all I know about it," which he did. He ended by saying, "Maybe if we talk about it we can help each other more and possibly prevent something like this from happening in the future." He asked the patient who was crying if she could tell the others about the suicide pact she had had with this particular patient, and how she felt about his death. The doctor's tone was so gentle that it seemed to give her courage to talk about it, and the terrible guilt she felt concerning his death. The other patients talked with her and said they each had a feeling of guilt, and tried to help her see that she was not responsible. A patient who had been admitted following an attempted suicide, was able to say how glad he was that he now had a chance to live. The patients and staff then talked about how to handle confidences of a patient when the patient

was really troubled, and it was decided if a matter was so urgent it would be best to encourage the patient to see the doctor at that time; or if the patient could not go, the one receiving the confidence would have to say that he felt he had to give the information to the doctor. It was also suggested that when someone knew that a patient had a serious problem he was not talking about, he would encourage him to talk about it in the group. This particular group lasted two hours and was most helpful for the patients and staff. The staff and patients knew that the doctor had done a very courageous thing in the way he had been able to talk with the group, and they appreciated the respect and trust he had shown in them.

Discussion. The emphasis in a community setting is on interpersonal relationships, on working *with* the patient, rather than providing for the patient as it was a few years ago when drastic therapy (insulin coma and electro-convulsive therapy) was the main therapy. Then, also, there was emphasis on relating to patients. There were picnics in which the staff participated, trips off the base, etc., but on the whole the background for the therapeutic setting was drastic therapy. Now, though electro-convulsive therapy is sometimes used in cases of acute depression, the scales are tipped. Drastic therapy is minimal (no insulin used), and interpersonal relationships carry the weight of the program.

The effectiveness of this newer type therapy then depends on the ability of the staff and patients to relate to each other, and the degree of effectiveness seems to be equal to the degree of multiple communication which exists in a community between patients with patients, patients with staff, and staff with staff.

CHANGES IN THE NURSING ROLE

Recently Lieutenant Briggs, a psychologist on our staff and I, spent two weeks at Dr. Maxwell Jones' Social Rehabilitation Unit at the Belmont Hospital in Surrey, England. The idea of the therapeutic com-

munity started with Dr. Jones and has been in effect there for nine years.

We also visited Warlingham Park Hospital, Champion House, Cassel Hospital, and the Marlborough Day Hospital. These five hospitals in England were selected for us to visit as representative of the more recent trends in social psychiatry.

In each of these hospitals there was respect for the dignity of the patient, and elevation of the patient role. Also in each hospital, in varying degrees, there had been a modification in staff roles. What we observed during our visit has been of value in helping to understand and support some of the changes taking place in our own psychiatric service.

What happens to the role of the nursing staff when a service goes through a transition such as ours has? As in England, we also experienced significant modifications. The nurse changes from one who has assisted in a more authoritarian role in providing therapy for the patients, to one who is a part of a group working right along with the rest of the staff and the patients. This is sometimes more difficult than it sounds. Will the nurse be able to accept the fact that much of her value lies in relating to others, rather than in directing? Will she find it difficult to help others do for themselves, rather than do for them? Still the staff must represent the reality factor; they know within what limits the ward community can operate as a part of the total unit therapy.

Working on an interpersonal relationship basis, the staff has three separate but overlapping areas on which to concentrate: (1) patient-staff relationships, (2) staff relationships and (3) education; and all are contingent on effective communication.

(1) *Patient-Staff Relationships.* This has been discussed.

(2) *Nurse and Staff Relationships.* We find it is sometimes difficult to practice what we preach. If staff members have feelings that are making them uncomfortable, they are encouraged to express these feelings.

The nurses have at least four recourses to

examine their feelings, in group-staff meetings following the Big Group, nurses' weekly meetings, administrative meetings four times a week, and seminars twice a week.

a. *Staff Meeting.* Staff meetings follow the groups, and we continue to work toward understanding the patient and can discuss our feelings concerning the patient. In this way we hope to gain some understanding of why we have some of these feelings.

b. *Nurses' Group.* In the nurses' group we attempt to develop policies and work out improved relationships within our own nursing staff. We have made some progress. One vital reason the going is "rough" is that the philosophy is to talk out feelings rather than cover them up. There were many situations before which reminded one of a kettle boiling, the lid sitting lightly in place, and everyone wondering just when it would blow off. Now we try to have the courage to take off the lid and look to see what the ingredients are that are causing this reaction. This is a learning process: To be able to say to each other, "I don't understand why you spoke so abruptly," and not make it an attack, or not have it accepted as an attack. Sometimes it seems that patients do far better than staff members in working out relationships. This could be true, since staff members are more status conscious.

c. *Administrative Groups.* The administrative group includes every staff member who is free to come. It has as its leader the Chief of the Service and may well include the newest corpsman on the psychiatric service. Generally, the doctors, many of the nurses, psychologists, social workers, and senior ward corpsmen are present. However, it is important that it is open to all if we hope to maintain a community spirit. Many things are worked out or discussed in these meetings, from developing new programs to again being able to say to each other, "I do not understand."

d. *Seminars.* Seminars are a part of the educational program and will be discussed later.

Discussion. In the Big Group and in all

other group settings, and in all the twenty-four hours a day we are trying to understand our patients, but we find this is only fifty percent of good patient care. The other fifty percent, which is equally important, is understanding ourselves and other staff members. Working toward this understanding will almost certainly result in greatly improved patient care.

We have not divided our philosophy and said, "Now this is good for patients, but this doesn't pertain to staff." If it works, it works because the basis is sound, so the patients and staff both use their groups to gain understanding.

It is rewarding that our administration has made it possible for this to now be the philosophy of the service when it started as a ward therapy.

(3) *Education.* If a way of therapy is to live and prosper, then there must be some plan for orientation of new members and a means of providing growth for both the new and old staff.

Our teaching, in addition to the groups previously mentioned, is done in student groups, student case presentations, and staff seminars. The leader for the student group is the nursing instructor, and various members of the staff act as leaders for the seminars which are primarily directed toward the needs of the students and general duty corpsmen.

Provision is made for all members of the staff, including all civilians working in the department, to be members of the educational program. It is felt that all who have contact with a patient have therapeutic potential and that being a part of the educational program

will help them to be comfortable and to identify with the department as a whole.

SUMMARY

The nurse in a setting such as this one gives up the strictly authoritarian role and works along with the patients and other staff members in providing a therapeutic community atmosphere. More recognition is given each patient's need to be a member of the ward community and that as members the patients can be very therapeutic with each other. The staff have learned to share with each other as well as with the patients. While the authoritarian staff role has diminished, there still remains the necessary authority of the staff and staff hierarchy. However, both patients and staff are learning respect for each other and realizing that the ability to share is healthy and beneficial. It has been a rewarding therapeutic experience, and in reality it may be more than a method of therapy. It could be a way of life.

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EDITORIAL

Our Convention

WE HAVE been telling you in this column to make plans to attend the 64th Annual Convention of our Association which will be held here in Washington at Hotel Statler, October 28, 29, and 30. Now we want to urge you again to make your plans to attend.

The Hotel Statler is holding a block of rooms for our members and guests so when you write for reservations be sure to mention that you are coming for the convention; otherwise you may not be able to get a room.

Now what about the program. We can point out a few events now but we do want to say that the September issue will give you the complete program so be sure to read that issue. Some of the important sessions will deal with disaster medicine, gastrointestinal surgery, cardiology from the medical and surgical viewpoints, and administration. In the way of entertainment there will be the Army Band concert, the Honors Night Dinner with dancing afterwards, and for the ladies the traditional Ladies Luncheon—always a top notch feature.

With this bit of information and more to follow in September better make ready now your plans and get your reservations in. We say again—DO NOT MISS THE CONVENTION.

Automobile Neurosis

THE bus driver and your editor were the only ones on the bus the other day as we approached the end of the route. Cars were lined up for several blocks waiting for the traffic light to change. This is not unusual for Washington traffic, of course, and it is a very usual occurrence at this par-

ticular traffic light where there is a lot of road construction going on.

One of the most important attitudes that a Washingtonian can develop for situations of the kind mentioned is patience. We do not infer that the editor of this journal is the most patient person, but he does try to be patient sometimes. And this was one of the times. After all, what can you do when traffic is lined up for blocks and then moves very slowly? Well, in this particular instance we started a conversation to dull the edge of our nerves.

The most logical topic of conversation was traffic, all aspects of it. That is a complicated subject you will agree. One phase that we discussed was the attitude of people. My bus driver said, "I don't see why it is that so many fine people, while you visit them in their homes, want to make you feel so welcome and then as soon as they get into their automobiles and get on the highway want to make you feel so unwelcome." That struck me as a fine observation.

Now what is there about an individual that makes him want to crowd you off the road, to beat you to an intersection, to constantly want to "get the edge," so to speak, on the other driver. Is it time? Well, maybe, but how much time is saved if an accident happens? And if it is time to be saved what are we going to do with it? Why do we not start sooner to get to a place on time? Why do we cut the minutes so short and endanger our own property and that of others, and the lives of others, even should we not regard our own life.

We do not believe that the time factor is the entire answer. We do feel that we Americans have lost a lot in our regard for the other man. Oh, yes, we talk about what we do. We boast of the money that we give

away. We are doing great things in this world. We are proud of all these things. We are proud of all the things we are doing for other nations. But there is something more that we must think about and that is our regard for the feelings of the other man. We must have some respect for him that can-

not be measured in dollars.

Now returning our thoughts to the automobile it seems to us that a good dose of just ordinary courtesy that can be self administered is a good remedy for this *automobile neurosis* that has become a pandemic disease in America.

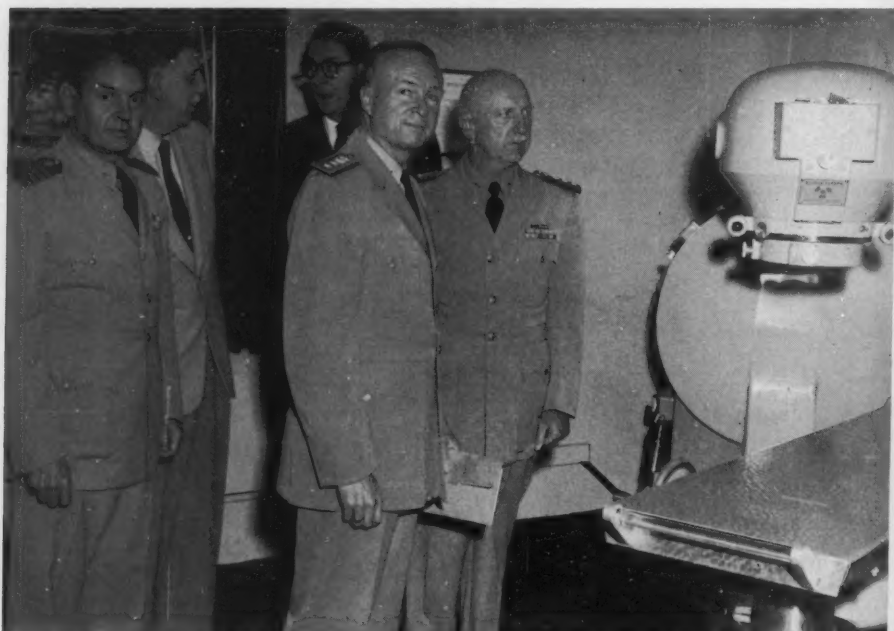
COBALT IRRADIATOR

The first Cobalt Irradiator to be placed in operation in the Armed Forces is located at the National Naval Medical Center, Bethesda, Maryland. It is also the only unit in the Washington, D.C. area.

The Cobalt source is of a strength of 500 curies but can be adapted to 1000 curies. It will be used primarily for the treatment of cancer cases.

The shielding of the cobalt unit is minimal

as the counter balance arm opposite the tube contains an adequate shield for the primary beam. Secondary scatter had to be shielded, and one-half inch of lead added to the room where the unit is installed solved this problem. This should be compared to the two million volt Van de Graaff unit in which two feet of concrete and one inch of lead is required to contain the scatter.



Official U. S. Navy Photo

Left to right—Capt. Edward C. Kenney, MC, USN, Commanding Officer, U. S. Naval Hospital, Bethesda, Md.; Rear Adm. Chas. F. Behrens, USN, Ret.; Mr. Robt. Lefevre, representative General Electric X-Ray Corporation, which supplied the unit; Rear Adm. Bruce E. Bradley, MC, USN, Deputy Surgeon General; Rear Adm. Thomas F. Cooper, MC, USN, Commanding Officer, National Naval Medical Center.

Around the World

(Ser. II, No. 12)

By

CLAUDIUS F. MAYER, M.D.

LWIRO and Irangi, both in the Belgian Congo, the sites of various interesting projects of biological research. At these two villages, virologists are making a survey of the viral antibodies present in the blood of the natives and of the monkeys and lemurs. A new piroplasma was discovered in the monkeys of the Irangi forests, and its life-cycle is now under observation at Lwirotshibati. Medical entomologists of the Congo are also aiding a campaign against the Glossina fly in Northern Ruanda. It is interesting to know that ornithologists proved that there is a free communication, at least for the birds, between the Belgian Congo and several Iron Curtain countries. Out of five swallows that had been tagged in Katanga, there was one recovered in Jugoslavia, another in Hungary, two in Soviet Russia and one in Czechoslovakia.

It has been widely held that the pattern of cancer in Africans is different from that in the white races. It was thought that malignant disease was rare in Africans, in general. Members of the Makerere College Medical School in Uganda set up therefore the Kampala Cancer Registry with the object of providing reliable data and evidence from the surrounding Mengo District concerning these beliefs. The greatest difficulty was the identification of the patients. The average African is unconcerned with spelling his name correctly, neither has he a correct idea about his age. It is also difficult to establish the true place of his residence. The studies are still inconclusive though it seems that the liver and penile cancers are more frequent, while the gastrointestinal and breast cancers are less frequent in Africans than in the Europeans who had served for the establishment of the cancer rates of the Danish registry.

The latest annual report of the East African High Commission includes several chapters with interest to medicine and allied sciences. We learn that the Virus Research Division of the Veterinary Research Organization has concentrated on rinderpest research and the production of rinderpest vaccines for this part of the world. Particular emphasis was also laid upon the training course in rabies, held in the laboratories of the organization. The Fishery Research Organization contributed to the solution of the food problem with its research into the possible food fishes of Lake Victoria and of the coastal waters. The Council for Medical Research had its first meeting in January 1955, while the Malaria Institute organized a malaria control project in the Tavita-Pare area. The most important work of the East African Virus Research Institute was on the behavior of the Rift Valley fever virus in the mouse, and of the Mengo strain of encephalomyocarditis virus in animal hosts. Work at Tinde showed that a 21-year old strain of *Trypanosoma rhodesiense*, which was kept alive by means of passages through the tsetse fly, was still infective to man.

The South African Medical and Dental Council has agreed to keep separately blood in white-labelled and black-labelled bottles to ensure complete separation of the blood at every stage of the preparation of blood transfusion. Such endorsement of "blood apartheid" was shocking to some students at Cape-town University. They frowned upon this practice in a resolution condemning the new species of *Homo albus* South-Africanus, the self-styled superman. The South-African government has decided, however, that, though the race of the donor was indicated on the bottles, apartheid should not be enforced in actual blood transfusions.

"Apartheid" in medicine has been manifested by various other recent measures in South Africa. On March 11, 1957, a bill was introduced in the South African Parliament for university "apartheid." This provides among other things the separation of the Faculty of Medicine (formerly the Durban Medical School) from the University of Natal at Durban, for the reason that the medical school was intended chiefly for the training of Africans. The dean of this school, who is also the professor of pathology (L. Gordon), has published a protestation against the Bill. As a result of the world-wide indignation about this matter, the Bill was temporarily withdrawn by the government in April. Now again we hear that a bill is prepared *debarrring non-European nurses* from the Nursing Council and the South-African Nursing Association.

Public health authorities in Birmingham, Great Britain, are alarmed on account of the increased *immigration of colored people* from the non-European parts of the Commonwealth. As such they are not subject to a detailed medical examination. A local survey showed, however, that several were suffering from tuberculosis though there was nothing at their arrival to suggest the presence of such infection. Colored persons also form the majority of patients at the V.D. clinics. Most of the gonorrhea and granuloma inguinale cases have been seen in West Indians. Other immigrants come from India and Pakistan. One of the Hindus had been suffering from a "non-infectious" leprosy, and was returned to India.

The month of August brings great *celebration* to Pakistan which became a new nation just ten years ago, in August 1947. The two provinces of Pakistan, East and West Pakistan, are separated from each other by a thousand miles. Both parts are different as to tribes, religions, and languages. In *East Pakistan*, the numerous tribes at the *Chittagong Hill Tracts* are mostly farming people, though some of them are forest-dwellers or employed by the Forest Department of the State which is paying

them 2 rupees a day and provides them with free medical care. The more important diseases among the Chittagong tribes are malaria, ringworm, scabies, intestinal ailments, dyspepsia, and yaws. Those who are living at higher altitudes are healthier than the inhabitants at the foothills and on the lowlands.

The tribes at the *Mymensingh District*, mainly Garos and Hajongs, have just recently turned to agriculture. They are commonly afflicted by malaria, eye diseases, dysentery, diarrhea, and kala-azar. The industrious tribal population of the districts of Dinajpur and Rajshahi are known to indulge in alcohol and opium-smoking. *Health measures* in the Hill Tract have been planned on the basis of a survey made 20 years ago. The area now has eleven dispensaries and 18 health centers, in addition to a hospital at Rangamati. A mission is also maintaining an 85-bed leper asylum at Chandragona. In the Mymensingh area health facilities are provided both by the government and the missions which maintain 6 dispensaries each (12 in all), many with in-patient departments. The mission dispensaries also provide service for maternal welfare.

In *West Pakistan*, many of the semi-nomadic tribes have taken up settlements. In the Northwest Frontier, large sections of the population are still pastoral. The territory has many natural resources, but communications are few. In the tribal territories of West Pakistan, there were 65 hospitals and dispensaries (six of them mobile) functioning by the end of 1954. The budget for the maintenance of medical care amounted to 1,180,000 rupees in 1954-55. This month, the *Pakistan Army Medical Service* may also celebrate the one-hundred year anniversary of the birth of its *hospital at Rawalpindi*. This service made great progress, especially during recent years, and the field medical units of Pakistan are especially exemplary.

A symposium was held last year in Cairns, North Queensland, on the problem of *alcoholism in Australia*. Alcoholism ranks with

cardiovascular diseases as a cause of morbidity and mortality in this part of the world. In 1938, Australians consumed beer at the rate of 24 gallons a year per capita. This number is now doubled. In North Queensland it is 41 gallons per capita. The Australian beer has $3\frac{1}{2}$ to 4% alcohol. The alcoholic is defined as a person unable to have one drink and then to stop. Most of them are psychiatrically normal, but emotionally immature. Australian doctors expect real help from rehabilitation only, as offered by the work of Alcoholic Anonymous.

In reference to the increasing alcoholism in Australia, we may note that *beer consumption* has also increased in *New Caledonia*. In 1956, the Colony imported about 570,000 gallons of beer, twice as much as in 1955. There are also local breweries whose production is unknown. Most of the beer comes to New Caledonia from Alsace-Lorraine, in bottles. Prior to World War II, little beer was drunk in this part of the world.

The *granulomatous mycoses* are not unknown in *Australia*. Actinomycosis occurs from time to time. Sporotrichosis is also occasionally recognized. Chromoblastomycosis must have existed for many years in Queensland and elsewhere, but only in recent years was it correctly diagnosed. Most of the Queensland cases were observed in the timbered humid areas. The fungi (*Cladosporium*) probably exist in various forms of vegetation; they could be cultured from several varieties of wood. Infection takes place through some skin abrasion or puncture. In a series of cases (23) described by two doctors of Brisbane, many of the patients had some contact with animals. Others became infected by splinters torn off from fence posts.

The *Tolais* are a Negroid race of the Melanesian group. They are living on the *Gazelle Peninsula of New Britain*, a small group of aboriginal people, some 32,000 all together, who have been in contact with Europeans since 1875. Recently published records of the Rabaul Hospital and of medi-

cal patrols conducted in the area show that among 26,340 inhabitants surveyed, 80 persons had cancer. The total death rate of the hospitalized group (23,437) in 1950-1954 was 1.48%. Among the deaths, cancer was the cause in 5.8%, tuberculosis in 12.7% and malaria in 17.6%. It seems that the Tolais have a racial or environmental predisposition to liver cancer (7.5% of all malignant cases) and to primary carcinoma of the (especially lower) extremities (39.11%). About 66.3% of the cancer patients were inoperable on account of the presence of remote metastases. (NOTE. The learned *Editor of the Medical Journal of Australia*, Dr. Mervyn Archdall, left his editorial desk on March 1, 1957, for a prolonged vacation, and will retire, after many years of excellent service, at the end of this August. Best wishes!)

During a recent meeting of the German Scientific Society for Aeronautics at Göttingen, Professor Betz, of the local university, lectured about the vogue in modern scientific research. Though his particular field is fluid dynamics, many points in his *criticism of western research methods* also apply to medicine. In general, mass production and mechanization have been introduced into scientific research, with bad consequences for the quality of the output, asserts the professor. Expensive laboratory equipment and a large staff, with automation and electronic processing of the results, have helped relatively little to stimulate genuine advance. The size and the variety of experimental equipment have called for mass-production of scientists to handle it. Since only a small proportion of them is really gifted for research, a *scientific proletariat* has been created. This produces mediocre contributions which flood the periodicals of today. Members of this scientific proletariat now fill many chairs in the universities, and they handle problems for which they are wholly unsuited. Thus, truly gifted research workers are kept out, complains the German professor.

Behind the Iron Curtain, during the Stalin Era, the use of cosmetics was almost completely abandoned. Ideologically and materi-

ally the communist life is in opposition to any aid to beauty. Recently, however, the *cosmetic industry* again increased its production in the iron-curtain countries. Women are now encouraged to use the various home-made (nationally made) perfumes, face creams, etc. But these products are invariably of low quality and of high price. The Polish cosmetic industry is manufacturing some 1,300 items, which are getting less and less desirable for women. "Warszawianka," a Polish perfume, had a high floral scent when it was first put on the market. Now, the scent is gone, but the price remains at the former level. A toothpaste costs 3.05 zloty per tube (the average female's salary is 800 zloty per month). Because of glycerine shortage, many face creams are made with a vaseline base and spoil rapidly. Many of the Polish creams become rancid in storage, and have to be reprocessed because nobody wants them, even at the reduced prices.

After an inquest of several unexpected postoperative deaths from tetanus, the North Staffordshire Royal Infirmary (at Stoke-on-Trent) announced that the present operating-theatre block would not be reopened, and a new operating theater will be built. The health officer, who at request examined the present operating rooms and their ancillaries, found evidence of the presence of tetanus spores in samples of dust, debris, wall plasters from the floor of the main corridor, from the packing-room floor, from electric bulbs, in a storage box for rubber gloves, and even on a surgeon's glove taken from the sterilization drum.

At a meeting of the Supreme Soviet of the Estonian SSR last September, the heads of various health agencies performed a public washing of their shortcomings and deficiencies. As everywhere behind the Iron Curtain, the public health has been entirely socialized and state-controlled in Estonia. The organization is headed by the Public Health Ministry of the country, and controlled both by the local Communist Party and the Health Ministry of the USSR. Thus, the "red tape" is of great length. There are 185 hospitals,

20 sanatoria, 153 nursing and/or midwifery centers, and about 122 industrial "health points." There are five city health departments and 39 rural district health departments, each with a sanitary-epidemic station, also with first-aid stations. Those in Tallinn and Tartu have a small air-ambulance unit while in many other villages the transportation of the sick must be by horse and carriage.

Indeed, this seems to be an excellent organization, if we could trust the Soviet statistics. The number of beds is variously stated from 8,510 to 10,000, and the number of doctors from 2,070 to 2,400. A member of the Supreme Soviet cynically remarked that the health institutions shown in the reports are not real, because they either do not exist at all, or they lack suitable rooms. The Dean of Tartu University critically stated that several of the district institutions are but "micro-hospitals," with as few as five beds only.

When we would look, for instance, for the "medical division of Meremae" we would find the hall and the kitchen of a former "new-land-receiver" peasant, while the "nurse-midwifery center of Ruusmae" is situated in the balcony and living room of the "Stalingrad" kolkhoz's chairman. The hospital of Nova is in a farmhouse where contagious patients cannot be isolated from general cases. The situation is not better in Tartu itself where young doctors are in training. There is also a shortage in doctors and in drugs in Estonia. Maybe this is the reason that the health director of a district took a second full-time job as the dentist of his own district's hospital, and an additional job as the bacteriologist of his own sanitary-epidemic station. The doctor's salary is still above the average; hence, the medical profession has become very attractive for everybody. But, some of the newcomers do not know anything about the Hippocratic Oath, especially those who belong to the "middle cadre" of doctors (a higher class of medical auxiliary personnel) . . . *Multa paucis!*

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It is a privilege to list the firms who have joined The Association of Military Surgeons as Sustaining Members. We gratefully acknowledge their support.

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ASSOCIATION NOTES

Timely items of general interest are accepted for these columns. Deadline is 3rd of month preceding month of issue.

Department of Defense

Ass't Secretary (Health & Medical)—HON.

FRANK B. BERRY, M.D.

Deputy Ass't Sec'y—HON. EDW. H. CUSHING, M.D.

SELECTIVE SERVICE

The Department of Defense has requested the Selective Service System to provide 11,000 men for the Army during August. No calls will be made for the Navy, Marine Corps or Air Force.

INFLUENZA VACCINE

Special single-strain influenza vaccine will be used for the immunization of military personnel. This measure has become necessary because of the threat to our forces from influenza which has been raging in the Far East.

Civilian employees and dependents overseas may have the vaccine given to them if they desire it.

Later a polyvalent influenza vaccine including the new strain will be given providing production in sufficient quantities can be attained in time.

Advances in communication made possible the delivery of specimens of the new strain of virus. The report of the influenza epidemic was made in Hong Kong on April 18. In less than one month specimens were at the Walter Reed Army Institute of Research in Washington, D.C. This time in-

cluded the necessary laboratory procedures at the 406th General Medical Laboratory in Japan.

ADENOVIRUS IMMUNIZATION

The Armed Forces Epidemiological Board has recommended that the recently developed adenovirus vaccine be given to all recruits entering the military service.

Dr. Maurice R. Hilleman of the Walter Reed Army Institute of Research in Washington has reported a study of the use of the adenovirus vaccine in approximately 9,000 recruits. He stated that the incidence of hospital cases of respiratory disease caused by the virus was reduced 90% which in money value amounts to \$1,500,000.

Illnesses caused by the adenoviruses include catarrhal fever, gripe, acute pharyngitis, "severe colds" or virus pneumonia.

DENTAL ADVISORY COMMITTEE

An Advisory Committee on dental problems in connection with the Medicare program has been formed with the following members: Maj. Gen. Paul I. Robinson, MC, USA, (*Medicare Director*), as chairman; Lt. Col. Robert W. Hobson, USA, executive secretary; and members: (*Army*) Lt. Cols. Steve G. Davis and Karl F. Ehrlich; (*Navy*) Capts. Arthur R. Frechette, Guy E. Stahr and Lt. Cdr. P. E. Rickey; (*Air Force*) Brig. Gen. James C. Cathroe and Lt. Col. D. W. Pratt; (*Public Health Service*) Mrs. Murray A. Diamond and Leland E. Weyer; (*Am. Dental Assoc.*) Drs. R. H. Friedrich, C. E. Rutledge and J. P. Looby; (*Blue Shield*) John W. Castellucci; (*Health Ins. Assoc. of Amer.*) J. F. Follmann, Jr.

DEFENSE RESERVE AWARD

The Health Center of Ohio State University recently received the Department of De-

fense Reserve Award. The Center, the Director of which is Dr. Charles A. Doan, was cited for its outstanding service in lending personnel and facilities to the 806th Hospital Center, and the 449th General Hospital, affiliated with the University.

The award includes a six foot pennant of dark blue nylon and wool fabric embossed with a central insignia of white percale, a citation listing the reasons for being selected as a recipient, and a certificate. Criteria used for the selection of the recipients are the policies practiced towards military reservists and reservist programs.

HONORED

Ernest W. Goodpasture, M.D., Scientific Director of the Department of Pathology at the Armed Forces Institute of Pathology received the honorary degree of Doctor of Laws from Tulane University at the June Commencement.

Army

Surgeon General—MAJ. GEN. SILAS B. HAYS

Deputy Surg. Gen.—MAJ. GEN. JAMES P. COONEY

RECEIVES DSM

Major General. Leonard Heaton, Commanding General of Walter Reed Army Medical Center, was awarded the Distinguished Service Medal on June 10.

The presentation was made by Secretary of the Army, Wilber M. Brucker in the presence of Mrs. Heaton, The Honorable Dr. Frank B. Berry, Assistant Secretary of Defense (Health and Medical), General Maxwell D. Taylor, Chief of Staff of the Army, and other high-ranking military officials.

The citation, read by the Adjutant General of the Army, Major General H. M. Jones, said:

"Major General Heaton distinguished himself by exceptionally meritorious serv-

ice in a position of great responsibility during the period of June 3, 1956 to November 15, 1956. In a number of important surgical operations, General Heaton displayed excellent diagnostic acumen, exceptional surgical



Army Photo

SECRETARY BRUCKER, GEN. HEATON, MRS. HEATON

judgment, outstanding surgical skill and devotion to his patients which resulted in consistently admirable results. His achievements have merited the high regard of his professional associates, exemplified the finest traditions of the service and reflected the highest credit upon himself and the United States Army."

SGO ASSIGNMENTS

Col. Theodore M. Carow has been appointed Chief of the Supply Division of the Surgeon General's Office. He received his medical degree from the University of Illinois in 1931, held a Fellowship in Surgery at the Mayo Clinic (1933-1935) and entered the Army in 1935.

From 1950 to 1953 Colonel Carow was Chief of the Armed Services Medical Procurement Agency (now the Military Medical Supply Agency) in Brooklyn, N.Y. His most recent assignment before coming to the Surgeon General's Office was in France.

Col. Charles W. Hill, MSC, has been appointed Chief of the Human Resources Research Branch, Research and Development Division, Office of the Surgeon General. In this position Colonel Hill will be responsible

for research in human engineering psychophysiology, environmental physiology, and clinical psychology. He will coordinate the Army program with similar programs conducted by the Deputy Chief of Staff for Personnel, The Adjutant General's office, the Navy and the Air Force.

Col. Harry R. Lancaster, VC, who recently returned from a tour in Germany, has assumed duties as Chief, Meat and Dairy Hygiene Branch, Veterinary Division, Office of the Surgeon General. He replaced Col. Curtis W. Betzold, VC, who has been assigned to Com Z, Orleans, France.

Col. Russell McNellis, VC, has been assigned to the Office of The Surgeon General as Assistant Chief of the Veterinary Division. He succeeds Col. Ralph W. Morhi, VC, who has been assigned to Headquarters, Second Army at Fort George G. Meade, Md.

Maj. Roland H. Ostrander, MSC, has been appointed Assistant Chief of the Organization and Combat Development Branch of the Medical Plans and Operations Division, Office of the Surgeon General.

MEDICAL SERVICE CORPS

A new commissioning program in the Medical Service Corps for fiscal year 1958 for scientific, professional and technical specialists has been announced.

Qualified applicants will receive commissions in the Army Reserve, in grades from second lieutenant through captain, and will serve an initial period of active duty of three years. Those who possess a Ph.D. degree in sciences allied to medicine will be eligible for a two year initial tour of duty.

Prior service men and company grade officers of reserve units not on active duty may volunteer for active service.

Colonel Bernard Aabel, Chief of the Medical Service Corps stated, "Advancement in military medicine and new emphasis on manpower use made necessary by today's global concepts of national defense have stimulated the need for officers equipped to function in the varied branches of the Medical Service Corps."

DIETETIC SPECIALIST

A new officer rating to be known as the Dietetic Specialist has been created for qualified individuals who wish to become hospital dietitians.

The individual must have a bachelor's degree from an accredited college or university which embraces a course prescribed by the American Dietetic Association for membership. They are not required, however, to have had dietetic internships or the three years of qualifying experience accepted as its equivalent by the Association.

ASSUMES OFFICE

Lt. Colonel Agnes P. Snyder, Chief, Physical Therapist Section, Army Medical Specialist Corps, has assumed her duties as Speaker of the House of Delegates, American Physical Therapy Association.

DIRECTOR OF NURSING—BAMC

Col. Agnes A. Maley, ANC, who has just completed a tour as Chief of the Nursing Service of the Sixth U. S. Army is now at Brooke Army Medical Center, Fort Sam Houston, Texas, where she has become the first Director of Nursing Activities on the staff of Major General William E. Shambora, Commanding General of the Center.

SKINNER MEDAL AWARD

Captain William P. King, MC, of Memphis, Tenn., became the 30th Army medical



U. S. Army Photo

CAPT. KING AND BRIG. GEN. DECOURSEY (right)

officer to be awarded the Skinner Medal at the Army Medical Service School, Fort Sam Houston, Texas, this past June.

The Skinner Medal is awarded for the highest scholastic rating in each basic military course.

Captain King, who received his medical degree from the University of Tennessee School of Medicine, has been assigned to the Walter Reed Army Medical Center.

RECEIVE M.S. DEGREES

Two Brooke Army Hospital residents, Major Cecil Albright, DC, and Major William Boyson, MC, have received Master of Science degrees from Baylor University Graduate School.

Major Albright has been assigned to Fort Gordon, Ga., and Major Boyson to Fort Leavenworth, Kansas.

PENTOMIC DIVISION

The Pentomic principle under which the Army is reorganizing its combat units, calls for a basic number of five battle groups to a division, and five combat units to a battle group. In the present infantry division there are three regiments, each regiment having three battalions of five companies each. The companies of the Pentomic Division are somewhat larger than under the regimental organization.

NEW GAS MASK

A new gas mask, the E-13, has been developed by the U. S. Army Chemical Corps.

This new mask is light, has no outside canister, provides a larger field of vision, offers less resistance to breathing, and protects against radioactive particles in addition to a wide variety of war gases. There is a speaking diaphragm which enables the wearer to carry on a conversation.

ANECDOTES

\$100 in cash is yours if you can submit an acceptable anecdote for the "Humor in Uniform" department of the *Reader's Digest*. The contributions must be true, un-

published and based on service experience, not over 300 words, typewritten, double spaced. Submit to: Chief, Magazine and Book Branch, Office of Chief of Information, Dep't. of Army, Washington 25, D.C., Attention: Humor in Uniform Editor, Reader's Digest.

Navy

Surgeon General—REAR ADM. BARTHOLOMEW W. HOGAN

Deputy Surgeon General—REAR ADMIRAL BRUCE E. BRADLEY

SURGEON GENERAL, TURKISH NAVAL FORCES

Rear Admiral Refik Kuntol, Surgeon General of the Turkish Naval Forces, recently concluded a 30-day visit to the U. S. Naval Medical Department Facilities. He visited the Surgeon General of the Navy, Rear Admiral Bartholomew W. Hogan, and other Flag Ranking Officers of the Medical Department in Washington at the beginning of the tour.

This is the admiral's second visit to the United States. The Turkish School of Hospital Administration was the result of his first visit.

HONORED

Dr. Charles W. Shilling, Deputy Director of the Atomic Energy Commission's Division of Biology and Medicine, has been named a fellow of the American Academy of Arts and Sciences. Among other fellows elected at the 177th Annual Meeting in Boston were Chief Justice Warren and Secretary Folsom, Department of Health, Education, and Welfare.

After a career of twenty-eight years in the U. S. Navy, Dr. Shilling requested retirement in June 1955. Upon retirement, he joined the staff of the U. S. Atomic Energy Commission. He is a native of Indiana. He was awarded the honorary Doctor of Science degree by Taylor University in 1954 for his outstanding contributions to science.

FOOD SERVICE COUNCIL

A Navy Medical Department Food Service Council has been established. It will assist and advise the Chief of the Bureau of Medicine and Surgery in matters pertaining to food service functions in naval hospitals. The Chairman of the Council is Commander Leslie E. Bond, MSC, Head, Food Service Branch, Hospital Administration Division. There are four other members.

PENICILLINASE

Penicillin reactions are the worry of many physicians when the decision to use that antibiotic is made. These reactions range from the serious anaphylactic reaction in which death occurs at once to mild skin reactions.

Capt. G. M. Davis, MC, USN, of the Great Lakes Naval Training Station, and Dr. R. M. Becker of Madison, Wis., reported at the recent American Medical Association meeting in New York City on the use of penicillinase in the treatment of these reactions.

The use of penicillin is wide spread, as we all know. It is a valuable antibiotic. It would be well if there were a test to determine the sensitivity of an individual to this antibiotic. Many reactions would be avoided. Since we can still foresee reactions the promise which penicillinase gives us is encouraging.

TO NYU-BELLEVUE

Captain John L. Enyart, MC, who recently retired from the Navy has been appointed administrator of the Institute of Physical Medicine and Rehabilitation of the New York University-Bellevue Medical Center.

DENTAL OFFICERS RETIRE

Captain Collister M. Wheeler, DC, USNR, Head, Dental Reserve Branch, Bureau of Medicine and Surgery, was placed on the Naval Reserve Retired List on July 1. During World War I he served as an En-

sign, and after discharge took up his dental studies. During World War II he entered on active duty in the Dental Corps.

Captain Louis D. Mitchell, Jr., DC, USN, retired on July 1 after thirty years service in the Navy Dental Corps. During his career in the Navy he earned an outstanding reputation as a dental educator and as a dental administrator. He was one of the pioneers in establishing training programs for enlisted dental technicians. He served as Commanding Officer of the Naval Dental School from 1948 to 1952. Captain Mitchell will assume a position on the faculty in the School of Dentistry, Medical College of Virginia.

DENTAL STUDENT (ENSIGN 1955) PROGRAM

The Dental student (Ensign 1955) Program was established to provide an opportunity for Navy minded dental students to be appointed as Reserve Officers in the grade of Ensign (Dental) for inactive duty while pursuing their professional studies. As ensigns, they are entitled to all the privileges commensurate with their rank and classification.

Among the benefits of participation in this program is legal deferment from military service as long as the individual remains in good standing in dental school, or until graduation. The period of active duty required by Selective Service is performed later as a dental officer in the Navy. The obligated service is performed by the officer immediately upon graduation instead of his being subject to induction at an indefinite date, with consequent interruption of his private practice.

Upon graduation from dental school, appointees under this program are obligated to accept superseding appointments, as offered, in the grade of Lieutenant (junior grade) in the Dental Corps of the Naval Reserve. They are required to serve on active duty for a period of two years following acceptance of superseding appointments unless their active duty obligation has already been discharged. They must remain

in a commissioned status in the Naval Reserve for a period of six years following acceptance of their superseding appointment.

As the number of Regular Navy dental officers increases, and if the number of active duty billets remains constant, the vacancies in this program are reduced. Due to the great popularity of the program among dental students, it has become necessary to establish a strict quota on a geographical basis for each class entering dental school. This permits a good geographical distribution of participants, as well as to assure that estimated needs of the service will not be exceeded. The quota for the dental class scheduled to graduate during calendar year 1961 has been established as 220. This compares with 477 participants who graduated during the calendar year 1956.

RETIRED

The following Medical Service Corps officers have been retired recently: Commander Francis A. Chevretils; Lieutenant Commanders Hugo B. Bergstrom, Bernard N. Bricks, Marvin H. Bryant, Carl P. Calhoun, Leslie E. Campbell, Raymond A. Edlund, Lawrence V. Hardin, Paul C. Law, Montana H. Lam, Robert H. Paddock, Earl L. Potter, Charlie A. Rice, Jr., Gilbert J. Shaw, Ross M. Stuckey; and Lieutenant Karl P. Moore.

Air Force

Surgeon General—MAJ. GEN. DAN C. OGLE
Deputy Surg. Gen.—MAJ. GEN. OLIN F. MCILNAY

FOURTH ANNUAL REPORT

The Fourth Annual Report of the USAF Medical Service which covers the period July 1, 1955-June 30, 1956 has just been received in the Association office. This 621-page report is filled with interesting reports of the various division of the medical service and carries statistical data on all aspects of that service.

The prefatory remarks by Major General Dan C. Ogle, Surgeon General of the Air Force, should be read by all medical personnel.

RECEIVES DECORATION

Colonel Robert J. Benford, Medical Corps, U.S. Air Force, received the Commendation Ribbon and Second Oak Leaf Cluster at a recent ceremony held in the office of the Surgeon General. The medal was presented by Major General Dan C. Ogle. The citation stated that Colonel Benford had distinguished himself while serving as a member of the Inter-service Committee for Dependents' Medical Care.

NEW ASSIGNMENT

Brig. Gen. Wilford F. Hall, USAF (MC), who has been chief medical officer at Supreme Headquarters, Allied Powers, Europe, located in Paris, is designated as the new surgeon for the Air Material Command when Brig. Gen. Edward Tracy retires late this summer.

ASSIGNMENTS

Colonel Kenneth B. Johnson who has been Executive Officer in the Office of the Surgeon General has been transferred to Lackland Air Force Hospital, Lackland Air Force Base, San Antonio, Texas. He will be Executive Officer of the hospital.

Colonel Donald Westra has been assigned as Executive Officer to succeed Col. Johnson in the Office of the Surgeon General.

AIDS TO MENTAL HEALTH

Lt. Col. John C. Mebane in a graduation address before the Elmer L. Meyers Memorial High School, Wilkes-Barre, Pa., listed four valuable aids to mental health and achievement: (1) religious faith, (2) loyalty, (3) perseverance in worthwhile goals, and (4) a realistic outlook on oneself and the world.

Colonel Mebane, a psychiatrist at the School of Aviation Medicine, Randolph Air Force Base, Texas, is the son of an Army

officer, Colonel Tom S. Mebane, now deceased.

LIFE ON MARS?

Extreme cold, an abundance of nitrogen but a lack of oxygen, the moisture of a desert are the conditions which life on Mars must meet.

To prove that life under such conditions is possible Dr. Roland B. Mitchell, Chief of the Air Force School of Aviation Medicine conceived a plan. Dr. Hubertus Strughold, the nation's top authority on space medicine, demonstrated theoretically that life could survive under the conditions mentioned. Lt. John A. Kooistra, Jr., is taking care of the details such as collecting soil from Mt. McKinley area in Alaska, the Grand Canyon, and the Painted Desert. Certain bacteria have thrived under these conditions. Now since life has been shown possible on Mars what does the Martian look like?

Veterans Administration

Chief Medical Director—WILLIAM S. MID-
DLETON, M.D.

Deputy Chief Med. Dir.—R. A. WOLFORD,
M.D.

PUBLIC LAW 85-56

Compensation and pension payments to veterans and their dependents are not affected by the Veterans Benefits Act of 1957, signed by President Eisenhower June 17, and designated as Public Law 85-56, effective January 1, 1958.

This new law was designed primarily to consolidate and make more uniform the laws administered by the Veterans Administration. To accomplish this purpose the law re-states, amends or repeals a large number of veterans' laws, some of which date back to the reconstruction era after the Civil War.

INDUSTRIAL ACCIDENT CASES

Non-service-connected patients who may be admitted to Veterans Administration hos-

pitals as emergency cases will, upon the establishment of their eligibility to industrial accident insurance or workmen's compensation benefits, be transferred to non-government hospitals.

Admission to a VA hospital in the case of non-service-connected disability is made on the sworn statement of the veteran that he is unable to defray his expenses. Consequently when it is established that the veteran is covered by insurance transfer is in order if the patient's condition permits.

APPOINTMENTS

Dr. Samuel L. Aspis, who has been director of professional services at the VA hospital at Birmingham, Ala., has been appointed as manager of the hospital at Poplar Bluff, Mo.

Marvin A. Chapman has been appointed as manager of the VA center at Wadsworth, Kansas. He succeeds William N. Gregg who recently retired. Mr. Marvin is a combat veteran of World War II and the Korean Conflict.

Dr. Verne K. Harvey who has been Director, Medical Division, Civil Service Commission, will become director of professional services of the Veterans Administration hospitals in Indianapolis, Ind., about October 1.

For seven years during the 30's Dr. Harvey was Health commissioner for Indiana. He is a graduate of the University of Indiana.

Dr. John D. McCullough, who has been director of professional services at the VA hospital at Tuscaloosa, Ala., has been appointed as manager of the VA hospital at Northampton, Mass., to fill the vacancy created by the retirement of Dr. Richard T. O'Neil.

Dr. Ernest M. Tapp has been appointed as manager of the VA hospital at Dearborn, Mich. Dr. Tapp had served as manager of the hospital at Poplar Bluff, Mo.

RETIRED

Dr. Edwin J. Rose, Manager of the Mount Alto Veterans Administration Hos-

pital, Washington, D.C., was retired on June 19, after 41 years of Federal service including 33 years with the Veterans Administration. He was presented with the Administrator's Commendation, an inscribed silver medal for outstanding service, by Mr. Harvey V. Higley, Administrator of Veterans Affairs.

Dr. Rose served in the Army Medical Corps in World War I, and again in World War II. He plans to live in Washington, D.C.

PHARMACY RESIDENCIES

Expansion of the Veterans Administration residency program in pharmacy has been recommended.

Two-year residencies for graduate students of colleges of pharmacy now are offered by VA hospitals at Los Angeles, Buffalo, Iowa City, and St. Louis in cooperation with schools in those areas. Students who complete the residencies and earn the master's degree from the cooperating universities will be encouraged to accept key positions in the pharmacy services of Veterans Administration hospitals.

GIVEN AWARD

Miss Ruth Addams, Deputy Director of the Nursing Service, in the central office of the Veterans Administration, was given the Exceptional Service Award. Presentation was made by Mr. Harvey V. Higley, Administrator of Veterans Affairs.

Miss Addams was cited for her exceptional contributions to nursing care and welfare of veteran-patients, including planning and development of the Administration's home nursing program.

PARATHYROID TRANSPLANT

A rare operation in which the parathyroid glands of a still-born baby were transplanted to a 36-year old veteran was performed at the Veterans Administration Hospital in Houston, Texas. The calcium metabolism which is controlled by the parathyroids leveled out to normal according to the doc-

tors at the hospital. While this immediate good effect was recorded it is too early yet to determine permanency of the transplant.

Public Health Service

Surgeon General—LEROY E. BURNET, M.D.
Deputy Surg. Gen.—W. PALMER DEARING, M.D.

NATIONAL LIBRARY OF MEDICINE

Use your own library first. Support your own library. With that policy the National Library of Medicine, Washington, D.C., has changed its system of loans.

Elements of the new policy: (1) Hereafter no materials will be loaned to individuals "over the counter" for use outside the building; (2) the interlibrary loan service and the photoduplication service will be considered as two phases of the same plan: to get medical literature to all who need it anywhere. In this scheme requests by individuals will be channeled through other libraries; no requests for loans of original works or orders for photocopies from individual borrowers will be honored.

In carrying out the program in this manner, the National Library of Medicine believes it is fulfilling its obligation to serve all people impartially, to make its collections available to all who need them, to keep its collections together for most efficient reference use, to preserve the collection for the benefit of future generations, and to strengthen the other medical libraries of the nation.

INTERNATIONAL CERTIFICATES OF VACCINATION

A new form of the International Certificate of Vaccination is now available. This new form includes changes that were made at the 9th World Health Assembly in 1956.

Copies of this form are available at 5¢ per copy or \$2.50 for one hundred from the Superintendent of Documents, Government Printing Office, Washington 25, D.C.

Miscellaneous

CIVIL DEFENSE

Stockpiling of medical items by the Civil Defense Administration will be drastically curbed this fiscal year because of the slash in funds by Congress. The Civil Defense Administrator, Val Peterson, requested \$75 million for medical equipment and supplies; Congress has allowed somewhat over \$3 million.

SOCIAL SECURITY

Ten million people are now receiving old-age and survivors insurance benefits. During the calendar year 1956 social security tax contributions totaled \$6.2 billion. Approximately \$5.7 billion was paid out in benefits. The assets of the Old-Age and Survivors Insurance Trust Fund, which amounted to \$22.5 billion at the end of 1956, is for the most part invested in U. S. Government securities. Administrative expenses for operating the program during the year were \$132 million, but it is pointed out that the interest on the securities totaled \$531 million in 1956.

FOR BETTER MEDICINE

Medicine has a common meeting ground for people of different languages. The University of Wisconsin Medical School recently took advantage of this common interest and held a conference on medical education for 50 foreign scholars from more than 25 countries. All conference participants were in this country.

ECG CORRESPONDENCE COURSE

Two courses, a basic and an advanced, in electrocardiography are offered by correspondence by the University of Southern California. For further information address the Office of the Director, Postgraduate Division, at the University, 2025 Zonal Avenue, Los Angeles 33, Calif.

AIR POLLUTION COURSE

New York University Post Graduate

Medical School in cooperation with the College of Engineering will give an intensive two-week course on "Air Pollution" from December 2-13.

For further information address: The Associate Dean, 550 First Ave., New York 16, N.Y.

POST GRADUATE COURSE

"Medical Aspects of Workmen's Compensation" is the subject of a one-week course to be offered October 21-25 by New York University Post-Graduate Medical School and the American Academy of Compensation Medicine. Further information can be obtained from: Office of the Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, N.Y.

MEETING

The International Conference of Ultrasonics in Medicine will be held at Hotel Statler, Los Angeles, Calif., September 6 and 7. For further information address the Secretary, 4833 Fountain Ave., Los Angeles 29, Calif.

ANNUAL AWARDS

The American Urological Association offers an annual award of \$1000 (first prize of \$500, second prize \$300 and third prize \$200) for essays on the result of some clinical or laboratory research in Urology. Competition shall be limited to urologists who have been graduated not more than ten years, and to hospital interns and residents doing research work in Urology.

For full particulars write the Executive Secretary, William P. Didusch, 1120 North Charles St., Baltimore, Md.

GOVERNMENT PUBLICATIONS

History of Military Mobiliz. in	
U. S. Army. #D 101.22:20-212	\$3.75
American Military History, 1607-1953. #D 101.48:145-20	2.50
Nat'l Plan for Civil Defense	
# FCD 1.2:N 21	.55

Any of above may be obtained from the Sup't. of Documents, Gov't. Printing Office, Wash. 25, D.C. (Cash, MO, or check).

economical, than the standard tests being used.

WHO PUBLICATIONS

Meat Hygiene	
Mono. Series No. 33	\$10.00
Malaria (English & French)	
Vol. 15, No. 3, 4, 5	6.00
Yaws & Syphilis	
Vol. 15, No. 6	2.00
Committee Report on Rabies	
Tech. Report No. 12130
Committee Report on Addiction-Pro-	
ducing Drugs. Tech. Rpt. No. 116 .	.30

Any of the above may be obtained from the Columbia University Press, IDS, 2960 Broadway, New York 27, N.Y.

RPR TEST

Rapid Plasma Reagin test (RPR) for the detection of syphilis can be done on unheated blood plasma in a matter of minutes. The test is said to be as accurate, yet more

MAGAZINES FOR FRIENDSHIP

Want to help with a very small outlay of cash for postage? Good magazines (not comics, or sensational variety) are needed in foreign countries in order to provide a true picture of the American life and character. This is a good project for any individual or organization. Further information may be obtained by addressing: Magazines for Friendship, Occidental College, Los Angeles 41, Calif.

TRAINING FILMS

The National Foundation for Infantile Paralysis has training films for professional audiences. Five films have been recently added to the collection. Further information may be obtained by writing to the Division of Professional Education, National Foundation for Infantile Paralysis, 301 East 42nd St., New York 17, N.Y.



O B I T U A R I E S

Col. Ira Cohen, USAR, Ret.

Ira Cohen, Colonel, Medical Corps, U. S. Army, Reserve, Retired, died at Stratford, Conn., March 8 at the age of 69.

Colonel Cohen was a native of Long Branch, New York. He received his medical degree from Columbia University College of Physicians and Surgeons in 1911. He served with the Army on the Mexican border in 1915. During World War I he served with the American Expeditionary Forces in France as a captain in the Medical Corps of the Army.

Colonel Cohen maintained an office in New York City, and was a consulting neurological surgeon to Mt. Sinai, Montefiore, Beckman and Monmouth Memorial Hospitals. He was the author of a number of articles on surgical and neurologic subjects.

He was a member of the American Board of Neurological Surgery, a Fellow of the American College of Surgeons, and a member of the American Medical Association and the Association of Military Surgeons of the United States.

Colonel Cohen's home address was: Beaver Dam Road, Stratford, Conn.

Lt. Col. Charles R. Rein, MC, USAR.

Charles Robert Rein, Colonel, Medical Corps, U. S. Army, Reserve, died of a cardiac condition May 15 in New York City at the age of 52.

Dr. Rein was a native of Ohio. He received his medical degree from the University of Michigan in 1928. After a post-graduate course in dermatology and syphilology he entered private practice in that specialty. He became a consultant to hospitals and the

U. S. Public Health Service, and an instructor at Columbia University.

During World War II, Doctor Rein was Chief, Division of Serology, Army Medical School, Washington, D.C. While in Washington he was a lecturer in Serology at the Georgetown University Medical School, the George Washington University Medical School, and the Howard University Medical School.

After the War, he returned to his practice in New York City with offices at 580 Fifth Avenue. He was medical consultant to the World Health Organization and led a successful campaign against yaws in Haiti. At the time of his death he was serving as Associate Professor of Dermatology and Syphilology at the New York University-Bellevue Medical Center. He was author of many articles in professional journals.

Dr. Rein received the Legion of Merit, U. S. Army; and the Medal of Honor and Merit (Haiti).

Lt. Col. Moses S. Levy, USAR, Ret.

Moses S. Levy, Lieutenant Colonel, U. S. Army, Reserve, Retired, died of a heart attack at his home in Smyrna, Georgia, May 23 at the age of 71.

Colonel Levy was a native of Savannah, Georgia. He was graduated from the University of Georgia School of Medicine in 1906. He served on the Mexican Border as Commanding Officer of the Old Georgia Hussars in 1916. For a short time during World War II he was on active duty with the Medical Corps of the Army.

Dr. Levy was extremely active as a clinical professor at the University of Georgia School of Medicine for many years, and was

an active member of the Richmond County Medical Association. He was an active member of the Georgia Medical Association, the American Medical Association and the Association of Military Surgeons of the United States. He was one of the Founders of the Augusta Chapter of the Organized Reserves, and was extremely active in that organization for twenty years.

Colonel Levy is survived by his widow, Mildred F. Levy; two sons, Lt. Col. J. W. Levy, U. S. Army, Dr. Tracy Levy, U. S. Public Health Service; and one daughter, Mrs. Stanley Lane of Long Island, N.Y.

Cdr. Catherine Yarnall, U. S. Navy, Ret.

Catherine Elizabeth Yarnall, Commander, Nurse Corps, U. S. Navy (Retired Inactive) died at the Naval Hospital, St. Albans, New York, on June 10 at the age of 49.

Miss Yarnall was a native of Mt. Carmel, Pa. She attended the Johns Hopkins Hospital School of Nursing from which she graduated in 1930. She received her Masters Degree in Nursing Service Administration from Teachers' College, Columbia University. In 1936 she entered the Navy Nurse

Corps, attained the rank of Commander and in 1956 was retired for disability.

Miss Yarnall is survived by her sister, Mrs. Miriam Bradley of 345 Main St., Chatham, N.J.

Interment was at Mt. Carmel, Pa.

LCdr. Reuben L. Larsen, U. S. Navy, Ret.

Reuben Leonard Larsen, lieutenant commander, Medical Corps, U. S. Navy (Retired-Inactive), died on June 21 at the U. S. Naval Hospital, Bremerton, Wash., at the age of 67.

Doctor Larsen was a native of Ada, Minnesota. He received his medical degree from Northwestern University in 1916. He entered active duty in the Navy Medical Corps on May 5, 1917 as a reserve officer and on June 21, 1917 was accepted for the Regular Navy. Due to physical disability he was retired in 1920. However, at the outbreak of World War II Doctor Larsen requested active duty and was assigned to Corpus Christi, Texas. On October 20, 1945 he was released to inactive duty and returned to his home in Seattle, Washington. He is survived by his wife, Thyri St. Clair Larsen.



BOOK REVIEWS

DIABETES MELLITUS. Handbook for General Practitioner. By Howard F. Root, M.D., F.A.C.P., Medical Director of the Joslin Clinic, Boston; and Priscilla White, M.D., F.A.C.P., Instructor in Pediatrics, Tufts University. Blakiston Division, McGraw-Hill Book Co., New York. 1956. Price \$7.00.

The detailed management of diabetes mellitus in medical and surgical practice is presented by two well known authorities in this valuable handbook. First considerations are the basic fundamentals about diabetes and its treatment by diet and insulin. Various problems connected with diabetic coma, acidosis, insulin shock, insulin resistance and oral drug therapy follow. More difficult to manage are the hazards developing when diabetes is associated with tuberculosis, urinary tract infections or cardiovascular diseases. Prior to modern chemotherapy the average life of tuberculous diabetics was only 5.5 years.

Other important considerations include management of diabetic complications involving skin, eyes, nervous system and kidneys. Especially noteworthy are discussions relative to the handling of diabetics requiring surgery and the treatment of juvenile diabetics. Under careful supervision modern surgery is very safe. Most encouraging is the fact that, when properly controlled, most pregnant diabetics may now be carried to term and delivered of normal, healthy babies. In the preinsulin era few diabetics ever became pregnant.

Methods for examining blood and urine, food tables, sample diets and tables of "food exchanges" enhance the value of this handbook which should appeal to students of medicine and should be an invaluable reference for all medical practitioners.

COL. H. P. MARVIN, USA, RET.

CLINICAL EXAMINATIONS IN NEUROLOGY. By Members of the Sections of Neurology and Section of Physiology, Mayo Clinic and Mayo Foundation for Medical Education and Research. 370 pages, illustrated. W. B. Saunders Company, Philadelphia and London. 1956. Price \$7.50.

The authors are to be commended for producing this relatively small but very thorough, informative and interesting handbook on the neurological examination.

There is a section on the neurologic history with specific reference and aids regarding various pain

syndromes, headaches and convulsive disorders. The chapters on the cranial nerves, neuro-ophthalmology, motor function, reflexes, sensory examination, mental function, language and motor speech and autonomic function contain very good coverage of the useful diagnostic procedures and, in addition, much information to aid in understanding their significance as it relates to anatomy, physiology and disease. There are brief sections on electro-encephalography, electromyography and electric stimulation of peripheral nerves and muscles and biochemical and pharmacological aids in neurologic diagnosis presented as fairly comprehensive introductions to these subjects.

This book is a manual. It will be greatly appreciated by beginners in Neurology, also by general practitioners and others interested in sharpening their neurologic diagnostics.

MAJOR THEODORE M. BADGLEY, MC, USA

DIAGNOSTIC METHODS IN VETERINARY MEDICINE. 4th Ed. By George F. Boddie, B.Sc.(Edin.), M.R.C.V.S., F.R.S.E., William Dick Professor of Veterinary Medicine, Edinburgh University. 412 pages. J. B. Lippincott Company, Philadelphia and Montreal. 1956. Price \$6.50.

This is the latest edition of this textbook by the noted English veterinarian which was originally published in 1944. Since that time the manuscript has become more detailed, and in this edition, Dr. Boddie has incorporated much of the original material with the addition of revised chapters on clinical hematology, diagnosis of poultry diseases, and a chapter on allergic reactions.

The first twelve chapters are devoted to the physical examination of animals and the interpretations of the results obtained by such procedures. Each chapter is devoted to one of the systems and the abnormalities normally associated with that region of the body. Chapters on clinical biochemistry, clinical bacteriology, clinical helminthology, collection of material for laboratory examination and post mortem technique are also included.

Although some of the chapters in this book seem rather lengthy and perhaps on occasion too all inclusive, others are quite short and to the point. This text should be of value to students interested in general methods of diagnosis and to the practitioner who wishes to improve his diagnostic methods.

E. H. COLES, D.V.M.

INTERNATIONAL LAW FOR SEAGOING OFFICERS. By Commander Burdick H. Brittin, U. S. Navy, Director of the Division of International Law in Office of the Judge Advocate of the Navy. 256 pages. U. S. Naval Institute, Annapolis. 1956. Price \$4.50.

"There is an increasing need to know the law that governs our presence on the sea and in foreign territory." Twelve chapters, ten appendices which give the various treaties since 1949, a glossary, a bibliography, and an index make up this book: Chapter I, *Scope and Sources*; Chapter II, *Sovereign States and Their Rights and Duties*; Chapter III, *Agents of International Intercourse*; Chapter IV, *Territory—Land and Air*; Chapter V, *Territory—Water*; Chapter VI, *Persons*; Chapter VII, *The High Seas*; Chapter VIII, *Ships*; Chapter IX, *War and Protection of War Victims*; Chapter X, *War at Sea*; Chapter XI, *Collective Security—International Organization*; Chapter XII, *International Instruments—Enforcement*.

Here is a book that can well be added to the library of any military officer and one that should be studied well in these days of international interests.

TECHNICAL METHODS AND PROCEDURES OF THE AMERICAN ASSOCIATION OF BLOOD BANKS. 111 pages. Burgess Publishing Company, Minneapolis. 1956. Price \$3.00.

This excellent, concise, up-to-date manual on blood bank technical methods and procedures should be adopted as a standard manual in all blood banks.

The steps given in the various tests are clear, accurately outlined, and contain no excess verbiage. Several accepted methods are given for each test, but all produce essentially the same results in the end. Following the tests there is in most instances a short explanation of the significance of the tests.

In the near future this manual will be published in French, Japanese and German; thus attesting to its popularity.

LLOYD R. NEWHOUSER, M.D.

HANDBOOK OF PEDIATRIC MEDICAL EMERGENCIES. 2nd Ed. By A. G. DeSanctis, M.D., Professor of Pediatrics and Chairman Dep't. of Pediatrics, Post-Graduate Medical School, New York University-Bellevue Medical Center; with collaboration of Chas. Varga, M.D., Portland, Ore., and 10 contributors. 389 pages, illustrated. The C. V. Mosby Company, St. Louis. 1956. Price \$6.25.

This handbook has been largely rewritten and has been expanded to include new chapters on metabolic emergencies, accident and poison prevention, genitourinary emergencies, and respiratory paralysis in poliomyelitis.

This is a compact, well-written, and intensely practical handbook for all physicians treating chil-

dren. The sole purpose of the book is to outline sound therapeutic advice to guide the physician in handling emergency pediatric problems. It is not meant to be a complete text of pediatrics, but a reliable guide for the physician facing a pediatric problem requiring rapid emergency therapy.

The authors have succeeded admirably in their purpose, for the earlier edition of the book has been enthusiastically received not only in the United States but also in many foreign countries. The chapters are short and succinct, and suggest readily available therapeutic agents of life-saving importance in treating the emergencies described. The authors cover not only the common serious emergencies, but also many less serious, though still troublesome, emergencies such as insect bites, toothache, epistaxis, hiccup, frostbite, and sunburn.

The text is well organized and is supplemented with a comprehensive and well-organized index—a must for a book such as this. It is highly recommended for any physician caring for children.

CAPT. THOMAS E. CONE, JR., MC, USN

INTRODUCTORY PSYCHOSOMATIC DENTISTRY. By John H. Manhold, Jr., D.M.D., M.A., Ass't. Professor and Head, Dep't. of Oral Pathology, Seton Hall University, College of Medicine and Dentistry. 193 pages. Appleton-Century-Crofts, Inc., New York. 1956. Price \$5.00.

Here is a book which presents a new and radical theory on the study of psychosomatics. Starting with the original concepts in this field, it traces their acceptance by the medical profession to a similar awakening by dentists of the relation between emotional disturbance and body functions. The author endeavors to stimulate sufficient interest in psychosomatic dentistry so as to produce further studies and ultimate recognition.

Dr. Manhold has based his theories on various statistical analyses. One chapter of his book is devoted solely to a breaking down of the components of statistics, so that the reader may gain a clear understanding of this science itself and thereby be better qualified to interpret subsequent findings.

The use of personality tests in their relation to dental pathology is traced effectively by the author. In cases of periodontal disease, malocclusion, and dental caries, he has evaluated through numerous statistical findings a definite connection between neurotic patterns and degree of abnormality.

Dr. Manhold states again that there are only two main ideas in the psychosomatic concept of dentistry—neurosis and neglect. Neurosis, indicative of deep emotional upheaval, can produce pathological abnormalities. Neglect may produce the same results but is directly dependent upon traits of personality.

The second part of this book deals with the practical applications of these concepts. It presents a

generalized code of conduct for the dentist to follow in his relationship with his patients. It tries in effect to give to the dentist a keener awareness of the patient as an individual. Various case studies are presented to illustrate common problems.

The reader leaves this book with a desire to learn more about the subject, to do greater research in the field, and to utilize what he has newly discovered for better service to his patients and to the community.

GEORGE G. TRATTNER, D.D.S.

THE MANAGEMENT OF ABDOMINAL OPERATIONS.

Vols. I and II. 2nd Ed. Edited by Rodney Maingot, F.R.C.S. 772 pages, 640 illustrations in 444 figures. The Macmillan Co., New York. 1957. Price \$32.00 set.

This is the second edition of a well known monograph on abdominal surgery which was first published in 1953. The second edition has been considerably modified in format. Thirty-two well known British physicians and surgeons have combined their efforts to produce a two volume manuscript covering very adequately the practical aspects of abdominal surgery.

As might be expected by anyone familiar with previous surgical volumes prepared by Rodney Maingot, this edition presents in a concise manner but with adequate detail the various operative procedures that one may undertake in the abdomen. The techniques described are those that have been tried and proved acceptable to teachers of surgery in Britain, the Commonwealth countries and the United States.

The editor has not confined this manuscript to surgical techniques alone but has also laid stress on preoperative and postoperative therapy. These discussions include anesthesia, blood transfusions, water and electrolyte balance and nutrition. In addition, the complications of surgery, their prevention and treatment are described in an illuminating manner. Each chapter is well organized, written in a direct manner and well documented by an adequate bibliography.

The editor states in the preface that these volumes are written especially for the postgraduate, the house officer and the general surgeon. The reviewer is of the opinion that the authors have very adequately succeeded in their objective and have prepared a manuscript on abdominal surgery which will provide an excellent review for the young general surgeon in his preparation for certification.

COL. DOUGLAS B. KENDRICK, MC, USA

PRINCIPLES OF CHEST X-RAY DIAGNOSIS. By George Simon, M.D., F.F.R., Radiologist, St. Bartholomew's Hospital, London. 193 pages, 162 illustrations.

F. A. Davis Co., Philadelphia. 1956. Price \$8.50.

This is a logically organized, well written, excellently illustrated and attractively printed book. The approach of the author to the subject is unusual and perhaps, as is claimed, unique in this field. (It corresponds exactly with the approach of Herbert French to his subject in the monumental "Index of Differential Diagnosis".) The book consists in first classifying the various types of abnormal shadows which may appear in a roentgenogram and then in considering each type in terms of (1) its physical description, (2) of the physiological and pathological factors involved in its production and (3) its diagnostic interpretation. This method of presentation is practical as it corresponds to that used by the radiologist in approaching an abnormal chest roentgenogram. It is in contrast with the opposite and customarily followed approach, which starts with a disease entity and considers the various changes in the chest roentgenogram with which it may be associated.

A large amount of fundamental material is clearly, accurately and concisely presented. All types of chest conditions are considered, including cardiovascular abnormalities, and there are chapters on tomography and bronchography. There is an interesting chapter entitled, "The Time Factor in X-Ray Diagnosis and Comparison of Radiographs of Different Dates," which includes recommendations on the timing of serial examinations. A useful appendix includes information and recommendations on technique.

The pages are of large size; heavy gloss paper is used. Illustrations are quarter-page in size and consist of excellently reproduced radiographs in the original negative. Numerous tables condense large amounts of data.

This valuable volume is recommended to radiologists and to other physicians interested in this difficult and important subject.

CAPT. C. E. BENTEL, MC, USN

THE DOCTOR AS A WITNESS. By John Evarts Tracy, Professor of Law (Emeritus), University of Michigan. 221 pages. W. B. Saunders Company, Philadelphia and London. 1957. Price \$4.25.

The purpose of this book is to provide the doctor (the author himself justifies the term "doctor" as including all professional scientists) with practical information on his potential functions in connection with legal proceedings. Legal rules of application to professional testimony, including those pertaining to privilege, expert opinion, malpractice, and insanity questions are treated in detail but with a minimum of legal technicality. In fact, the doctor is cautioned to concern himself with the issues which lie within his own field of knowledge, and leave the law to the attorneys and the judge.

The author outlines the procedures utilized in obtaining expert testimony, and presents samples of direct and cross-examination. Stress is laid upon questions of frequent occurrence, such as use of diagrams, x-rays, medical texts, etc. The doctor is also warned to guard against certain tactics and questions designed to trap him.

The book is replete with invaluable advice, both from the author and from other selected publications, as to the attributes to be sought and the faults to be avoided by a professional witness. Even the question of compensation of the doctor-witness is given due consideration.

The professional man will find in this book a clear, factual presentation of the material he needs to prepare himself for his almost inevitable role of witness in a legal proceeding.

CAPT. JAMES W. HUNT, JAGC, USA

ALCOHOLISM. A TREATMENT GUIDE FOR GENERAL PRACTITIONERS. By Donald W. Hewitt, M.D., Chief Medical Advisor, Charity Alcoholic Rehabilitation Center, Los Angeles. 112 pages. Lea & Febiger, Philadelphia. 1957. Price \$3.00.

This book is written primarily to stimulate the interest of general practitioners and as a treatment guide for them. Alcoholism is first defined and then differentiated from "problem drinking." Before attempting therapy, we must thoroughly understand alcoholics of which there are an estimated 4,589,000 in the U.S. Medical management of acute alcoholic episodes and of various alcoholic psychoses are detailed in addition to important follow-up treatment. We are told how to use "antabuse" and "conditioned reflex" techniques, if and when indicated. About 50% of true alcoholics are also drug addicts to some degree. Proper therapy should include common sense advice to families and friends. The appendix includes selected reading material that should prove beneficial for alcoholics. Physicians, nurses and others interested in this tremendous social problem will find this 112 page monograph very interesting and helpful.

COL. H. P. MARVIN, USA, RET.

CURRENT THERAPY 1957. Latest Approved Methods of Treatment for the Practicing Physician. Edited by Howard F. Conn, M.D., and 12 Consulting Editors. 731 pages. W. B. Saunders Company, Philadelphia and London. 1957. Price \$11.00.

The 1957 volume of *Current Therapy* is the 9th annual revision of this outstanding compendium on modern therapeutics compiled from leading medical centers at home and abroad. The present text is bigger and better than any of its predecessors; specifically, in 1956 there were 282 contributors writing of their experience with 250 new drugs; in 1957, 300 essayists proclaim the virtues of 299

modern therapeutic agents. This, in turn, brings up the question of the relative value of "bigger and better."

Surely, the present tome, like its previous companions, is far from profound and occasionally lacks unity of thought and cohesion of expression. Actually, it provides a sounding board for some 300 varied styles of writing, and the editor is to be congratulated in presenting conflicting opinions without editorial comment or commiseration. The rotation of previous authors and the inclusion of new writing talent makes this volume much more than a sterile yearly revision. Nearly 40% of the material is new or significantly modified in the 1957 issue, but the fundamental problems of various disease entities and their therapy remain essentially the same (and probably always will). Winnowing the wheat from the chaff is a perennial problem demanding skill, sagacity, patience and perspective. Herein lies the Art of Medicine and medical writing. In this current volume the reader is presented with practical, therapeutic commentaries based on the clinical experience of some 300 experts in their specialties and subspecialties, from which he may draw his own conclusions.

The "methods" attributed to the various authors are presented merely as suggestions or recommendations. They are not necessarily rigid "rules and regulations" nor are they intended to be official therapeutic directives. The moderate tone of this volume is most commendable for, in a sense, each patient is a law unto himself as far as the clinical management of his disease or diseases is concerned. Therapy, therefore, is seldom simple and specific. The same may be said of thorough diagnosis and thoughtful prognosis which must precede and frequently modify therapeutics. Clinical imagination is often more important than dogged determination. Therapeutic regimens must of necessity be flexible and tailored not to the disease per se but rather to the particular patient who has a more or less specific illness.

The editor of and the consultants and contributors to *Current Therapy*, 1957 have performed a herculean task with imagination and perspective, patience and moderation.

CAPT. CHRISTOPHER C. SHAW, MC, USN

CLINICAL PHYSIOLOGY. The Functional Pathology of Disease. Edited by Arthur Grollman, M.D., Ph.D., F.A.C.P., Professor and Chairman of the Department of Experimental Medicine, University of Texas Southwestern Medical School, 854 pages, McGraw-Hill Book Company, Inc. New York, Toronto, London. 1957. Price \$12.50.

The purpose and concept of the editor in bringing out this text is "to bring to the senior medical student, the intern and the practitioner the basic physiologic principles of clinical medicine." This

has been very ably accomplished through the correlated efforts of twenty-six nationally known workers in the various fields of medicine. In their presentations emphasis is placed on those aspects of medical science which have a practical application to the daily practice of medicine.

The material is divided into nine general sections. The major attention is given to those studies in the section devoted to "General Metabolic Considerations," "The Cardiovascular System" and "The Endocrine System" and documents the fields in which the greatest advancements have been made in recent years. This does not, however, detract from the value of the material in other sections since adequate coverage is already available in current text books.

The work of the authors individually and collectively is of the highest order—clear, concise and informative. Up-to-date references are appended at the end of each chapter or article. An adequate subject index is found at the end of the book.

In summary, this text is an excellent up-to-date reference in Clinical Physiology. It is recommended as such to the student, intern and to the practicing physician.

COL. CHARLES R. MUELLER, USA, RET.

CHIRURGIE ORTHOPEDIQUE DES PARALYSIES. By R. Merle d'Aubigné, Professor of Clinical Orthopedic Surgery, Faculty of Medicine of Paris; J. Benassy, Surgical Assistant of the Hospital of Paris; J. O. Ramadier, Surgical Assistant of the Hospital of Paris; and 12 Collaborators. 432 pages, 171 figures. Masson Et Cie, Paris. 1956. Price 5,000 fr.

This volume is one of a series of 15 now in preparation by the authors, the entire treatise to cover the total field of orthopedic surgery and physical therapy in disturbances of the motor system. Drawn mainly upon the experience of the authors, but referring freely to both British and American sources, the effort here is to lay down, in direct, practical form, the rules for treatment both by surgical operation and by all the various techniques known as physical therapy of the neurologically handicapped patient.

Throughout the book the authors maintain the optimistic approach to this group of patients, the "paralytics" (a word they dislike), who are so often thought of as being incurable. On the contrary, as they point out, many peripheral nerve lesions are in large part or almost entirely cured by proper treatment. Palliative treatment, by tendon transplantation, arthrodesis, arthrorisis, and the proper application of mechanical apparatus, manipulation, and re-educative exercises often restore function to a degree such as to be considered almost a cure. This book deals mainly with the results of defects in the motor system resulting from neuro-

logic lesions caused by trauma. However, the orthopedic treatment of poliomyelitis, hemiplegia (as from stroke), and the cerebral spastic child is touched upon.

A large section of the book is devoted to the discussion of the pathology and treatment of peripheral nerve injuries, particularly those of the upper extremities. The text is so terse and pointed as to be almost in outline form, yet there is adequate elaboration upon present day, experience-tested surgical procedures such as nerve suture, tendon transplant, joint fixation, and splinting. The illustrations in this section of the book are particularly effective.

In their comments on the treatment of painful amputation stumps, the authors note that frequently the surgeon accuses the patient of bad faith when good results are not obtained, whereas actually it should be the therapy used which should be blamed. Medical treatment is almost consistently useless. *Pre-ganglionic* sympathectomy and antero-lateral cordotomy are the only surgical procedures which the authors have found either safe or effective. *Post-ganglionic* sympathectomy, neuroma resection, nerve ligation, re-amputation, posterior rhizotomy, commissural myelotomy, peduncular tractotomy, retro-rolandic excision, lobotomy, topectomy, and thalamic coagulation are, in their experience, either ineffective, or dangerous, or both.

The authors feel that the treatment of traumatic paraplegia is essentially one of supportive, nursing routine, with attention to the prevention of bed-sores, to good nutrition, and to re-educating the patient to use what motor system he has left. They definitely do not like the Stryker frame (too narrow, allows only two positions).

Obviously, to discuss at length all the possibilities of treatment of post-traumatic neuro-muscular lesions in 432 pages would be impossible. Therefore this book cannot be considered a "source book," nor even a complete text book. It is, rather, a good and ready reference where one may quickly obtain a general and sane view of a particular topic. The subjects are well arranged, the book is artfully printed and bound, the illustrations are almost uniformly excellent, and the references to current literature and the index are adequate though not profuse.

JOHN MARTIN, M.D.

THE EARLY DETECTION AND PREVENTION OF DISEASE. By John P. Hubbard, M.D., George S. Pepper, Professor of Public Health and Preventive Medicine, University of Pennsylvania School of Medicine. 343 pages. McGraw-Hill Book Co., Inc., New York. 1957. Price \$7.50.

One of the regular postgraduate courses of the American College of Physicians was recently devoted to *The Early Detection and Prevention of Disease*. A 5-day symposium was arranged and

directed by the Department of Public Health and Preventive Medicine of the University of Pennsylvania School of Medicine.

Each one of the faculty for the course was selected because of his authoritative knowledge of his own field. The entire course was recorded and transcribed; and from this transcription the book has been prepared. It deals extensively with the relation of preventive medicine to the clinical practice of medicine, rather than intensively with the several aspects of a single disease or a single physiologic system. Special attention is given to the practical application of preventive medicine in industry and in the military services.

Twenty-eight eminent clinicians have thoroughly discussed the current status of knowledge concerning the measurement, maintenance, and improvement of health, the early detection of disease, prevention where possible, and the limitation of complications. The volume is interesting, informative, and is written in a concise and comprehensive manner. Those engaged in general practice and preventive medicine, especially, will find this book a valuable addition to the library.

LT. COL. GEORGE A. MCCOY, USAF (MC)

MUSCLE RELAXANTS IN ANESTHESIOLOGY. By Francis F. Foldes, M.D., Associate Professor of Anesthesiology, University of Pittsburgh School of Medicine. 210 pages. Charles C Thomas, Springfield. 1957. Price \$5.50.

This book is an extensive and complete monograph based on the experience of more than a decade of clinical and experimental work of the author and numerous investigators with muscle relaxants. It fills an urgent need for a practical guide in the use of muscle relaxants in anesthesiology.

The first five chapters of the book are devoted to the basic considerations of muscle relaxants such as history, chemistry, pharmacology and physiology of neuromuscular block. The remainder of the monograph is concerned with technique of administration, use of antagonists, complications, special considerations of the muscle relaxants most frequently used in anesthesiology, diagnostic and therapeutic uses and use of relaxants in patients with altered sensitivity.

A special feature of the book is a four page glossary to save time for the busy physician who might not be familiar with certain terms used by the author.

The book is well written and contains an excellent and comprehensive bibliography. It fulfills the objective of the author in providing a practical guide for the safe and efficient use of muscle relaxants and as such is highly recommended for all anesthesiologists, residents in anesthesiology and nurse anesthetists.

CAPT. JAMES G. KURFEES, MC, USN

ATLAS OF CLINICAL ENDOCRINOLOGY. By H. Lissner, A.B., M.D., Clinical Professor Emeritus of Medicine and Endocrinology, University of California School of Medicine; and Roberto F. Escamilla, A.B., M.D., Clinical Professor of Medicine, University of California School of Medicine. 476 pages, 148 plates, including 3 in color. The C. V. Mosby Company, St. Louis. 1957. Price \$18.75.

The physician who is pressed for time and who profits by graphs and photographs will find this atlas an excellent aid in his study of diseases of the endocrine system.

Each of the various gland systems is carefully covered by definitions, signs and symptoms, diagnostic tests and treatment. References cover each subject. The photographs are excellent for their historical interest, for the diagnostic features and for the prognostic implications. There are many serially obtained photographs showing the natural progression of the disease process.

The appendix is devoted to timely charts and graphs of normal growth and development patterns for heights and weights and osseous and dental development.

The authors have collected their material from international sources and their discussions are of the classically developed endocrinopathies.

The binding and format are of superior quality. The physician interested in the endocrines will find this an excellent standard reference for years to come.

CAPT. BRUCE L. CANAGA, JR., MC, USN

PRINCIPLES AND TECHNICS OF REHABILITATION NURSING. Edited by Deborah MacLurg Jensen, R.N., M.A. 345 pages, illustrated. The C. V. Mosby Company, St. Louis. 1957. Price \$5.50.

Very few books on rehabilitation have been available for nurses since World War II. Much of the information previously obtained came only in magazine articles and pamphlets. Since the basic philosophy and the whole broad field of rehabilitation has advanced so rapidly in recent years, this book is timely.

Rehabilitation has now been accepted as a necessity in all nursing service, spanning, as it does, the gap for the patient between despair and happiness. This manual provides a concise modern guide for those engaged in this work. It emphasizes the principles and technics of rehabilitation nursing concerned with the aged, the mentally ill, children, special diseases and speech therapy. It goes far beyond the mere physical aspect of rehabilitation.

The presentation is clear and interesting and the format pleasing and easy to read. Appendices include agencies for rehabilitation, a list of magazines and sources of literature, films and their sources, a brief glossary for quick reference and an index.

Review questions are presented at the end of every chapter and a list of references.

The authors have set out to show how to give more complete care to the patient through the use of modern technics. They have been successful.

LT. CDR. MARIE A. KNOWLES, NC, USN

THE FIGHT FOR FLUORIDATION. By Donald R. McNeil. 241 pages. Oxford University Press, New York. 1957. Price \$5.00.

This is an interesting, detailed and well documented history of the fight for fluoridation in this country. Commencing with the discovery of dental fluorosis in 1901 by F. S. McKay, D.D.S., of Colorado Springs, the author carries readers through the many stages of this bitter fight. Opposition to fluoridation has been spearheaded by extremist groups, naturopaths, "Christian Scientists, Chiropractors, and those interested in health foods." Proponents have been dentists, physicians, scientists and civic groups. Although still a controversial subject, fluoridation is now endorsed by over 200 nationally known organizations including The American Dental Association, American Medical Association, American Public Health Association, U. S. Public Health Service, The National Research Council and most national scientific bodies. Every citizen interested in the prevention of dental caries or in any aspect of fluoridation should read this book.

COL. H. P. MARVIN, USA, RET.

REHABILITATION LITERATURE, 1950-1955. Compiled by Earl C. Graham, Librarian; and Marjorie M. Mullen, Ass't. Librarian, National Society for Crippled Children and Adults. 621 pages. The Blakiston Division, McGraw-Hill Book Company, Inc., New York, Toronto, London. 1956. Price \$13.00.

This monumental compilation of 5,214 periodical articles, pamphlets and books affords a ready reference, especially for the physician engaged in the practice of physical medicine and rehabilitation. The references are particularly useful to those closely engaged in programs for the care and welfare of the handicapped.

A bibliography of this nature is a necessity to the student and worker in the medical and associated fields of therapy.

The references are listed alphabetically according to entity (title) and under these by author in the same manner. A short abstract is included under each reference, which makes this book valuable in researching the literature for some specific trend. Following the references is a complete index of authors and subjects.

CDR. G. E. VAUFEL, MC, USN

ULTRAMICRO METHODS FOR CLINICAL LABORATORIES.

By Edwin M. Knights, Jr., M.D., Roderick P. MacDonald, Ph.D., Jaan Ploompui; all of Harper Hospital, Detroit. 128 pages, Grune & Stratton, New York and London. 1957. Price \$4.75.

The authors have made readily available, in compact form, practical techniques for ultra-micro analysis for a number of clinically important substances. The amount of serum or spinal fluid required is of the order of 0.01 to 0.03 ml. for each determination.

Sections are devoted to a description of the apparatus used, techniques of blood collection and pipetting, special equipment needed, a directory of distributors and producers of micro-equipment, and tables of normal values along with a well chosen bibliography.

The special equipment needed for a laboratory not already equipped would cost about \$2,000-\$2,500, the most expensive single item being a spectrophotometer equipped for the use of ultra-micro capillary cuvettes.

One unfortunate discrepancy arises in the description of ultra-micro pipets in which pipets calibrated "to deliver" are recommended; while in the description of calibration a "to contain" procedure is outlined. The authors' use of the term "lambda" to indicate 0.001 ml. or 1 microliter is a practice which should be confined to oral use in the laboratory and not extended to a written manual.

The methods themselves are, in general, micro-modifications of well known and dependable reactions, and should give no difficulty to the technician who has mastered the use of the ultra-micro pipet. The book should encourage much wider application of these procedures which can contribute greatly to the clinical management of difficult cases.

J. H. BOUTWELL

PRINCIPLES OF UROLOGY. By Meredith F. Campbell, M.S., M.D., F.A.C.S., Emeritus Professor of Urology, New York University, Consulting Urologist to Bellevue Hospital. 622 pages, 319 figures. W. B. Saunders Company, Philadelphia and London. 1957. Price \$9.50.

This book is an excellent, up to the minute, concise text containing the over-all principles of urology. It is easily read because of the author's excellent writing ability, presentation, clear print, and excellent illustrations.

The chapters are divided on the basis of various urosystemic mechanisms such as obstruction, infection, calculus disease, tumors, neuromuscular disease and so forth. This distinguishes it from the average teaching text wherein there are anatomical entities of the diseases in urology.

A portion of the introductory chapter concerns

semantics and word usage in urology. Dr. Campbell explains clearly when urological consultation and examination is indicated. At the conclusion of the book, there is a list of questions pertaining to each chapter. The latter represent an excellent review, are brief and very enlightening.

The book contains the latest developments in principles of urology including adrenal disease processes. It is highly recommended to any one in medicine who is faced with the diagnosis, proper management and the treatment of urological problems.

CYRIL I. SEASE, JR., M.D.

PRACTICE OF MEDICINE. 6th Ed. Edited by Jonathan C. Meakins, M.D., LL.D., D.Sc., formerly Professor of Medicine and Director, Dep't., of Medicine, McGill University. 1916 pages, 318 figures. The C. V. Mosby Company, St. Louis. 1956. Price \$16.00.

Users familiar with earlier editions of Meakins' *Practice of Medicine* will scarcely recognize the Sixth Edition. The text now consists of 22 sections under the supervision of 24 associate editors, principally from the eastern half of this country and

Montreal, Canada. In some instances, the associate editors wrote the entire section; while in other sections, 87 contributors wrote chapters in their particular field of interest. The result is a smooth reading text with each chapter written by men especially conversant with that problem, yet the whole is carefully coordinated to a uniformly high level.

The sections follow the conventional arrangement with many of them having basic introductions. There is no Psychiatry section, but there is a long and comprehensive section on Neurology and one on Psychosomatic aspects. The articles are as up to date as can be expected in a text and the bibliographies have been deliberately held down to a few major current references.

Typographically, the pages are increased over 350, the index is doubled and is more usable, the type is more readable, and the single page column is retained for those preferring that style to the double column. This completely redone edition should enjoy an even wider share of those using a standard medicine text and can be strongly recommended for that purpose.

COL. MARTIN A. COMPTON, MC, USA



NEW BOOKS

Books may be ordered through the Association.

- Regulation and Mode of Action of Thyroid Hormones, Vol. 10, Ciba Foundation Colloquia on Endocrinology*, edited by G. E. W. Wolstenholme and Elaine C. P. Millar. Little, Brown & Co., Boston, Mass. Price \$8.50.
- Ciba Foundation Symposium on the Chemistry and Biology of Purines*, edited by G. E. W. Wolstenholme and Cecilia M. O'Connor. Little, Brown & Company, Boston, Mass. Price \$9.00.
- Practical Otolaryngology*, by Gervais Ward McAuliffe, M.D. McGraw-Hill Book Co., Inc., New York, N.Y. Price \$7.00.
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